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PROGRAM HANDBOOK 1973-1974

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THE GEORGE BROWN COLLEGE

OF APPLIED ARTS AND TECHNOLOGY

PROGRAM HANDBOOK

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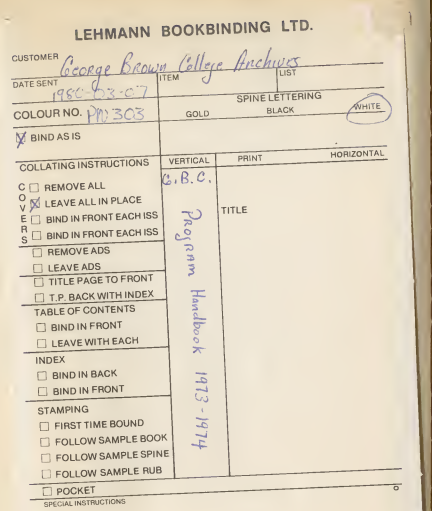

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SPECIAL INSTRUCTIONS

THE GEORGE BROWN COLLEGE OF APPLIED ARTS AND TECHNOLOGY

PROGRAMS 1973 - 1974

The content of this publication is intended to serve as a guide only. The George Brown College of Applied Arts and Technology reserves the right to delete or alter the contents of this publication in any way and without notice.

This College was established and is funded by the Province of Ontario through the Ministry of Colleges and Universities.

The George Brown College of Applied Arts and Technology, P. O. Box 1015, Station B, Toronto, Ontario, M5T 2T9, Canada. Telephone (416) 967-1212.

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1973 THE GEORGE BROWN COLLEGE CALENDAR OF EVENTS

April	2	Evening registration: part-time courses.
April	20	Good Friday; College closed.
April	23	Easter Monday; College closed.
April	24	Registration: apprenticeship programs.
May	21	Victoria Day; College closed.
June	15	Completion of technician and technologist year.
July	2	Canada Day; College closed.
July	31	Last registration date for students from foreign countries.
August	3	Completion of two-year technologist programs.
August	6	Civic holiday; College closed.
August to	27 31	Registration week for post-secondary programs.
September	3	Labour Day; College closed.
September	4	Registration: apprenticeship and short programs. Post-secondary program classes commence.
September	17	First registration night: part-time courses.
October	1	First night of classes: part-time courses.
October	8	Thanksgiving Day; College closed.
October	27	Convocation.
October	29	Registration: apprenticeship programs.
December	21	Last day of first semester, 1973.

1974

January	1	New Year's Day; College closed.
January	2	First day of second semester. Registration: apprenticeship programs.
January	3	Last registration day: all courses: second semester.
January	7	First registration night: part-time courses.
January	9	First night of classes: part-time courses.
February	25	Registration: apprenticeship programs.
April	1	First registration night: part-time courses.
April	3	First night of classes: part-time courses.
April	12	Good Friday; College closed.
April	15	Easter Monday; College closed.
April	22	Registration: apprenticeship programs.
May	27	Victoria Day; College closed.
June	14	Completion of technician and technologist year.
July	1	Canada Day; College closed.

1973 THE GEORGE BROWN COLLEGE CALENDAR OF EVENTS (REVISED - MARCH 20, 1973)

April	2	Evening registration: part-time courses.
April	20	Good Friday; College closed.
April	23	Easter Monday; College closed.
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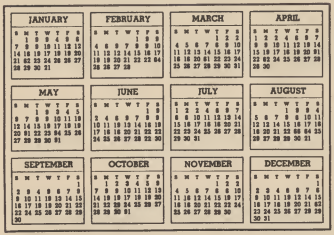
January	3	Last registration day: all courses: second semester.
January	7	First registration night: part-time courses.
January	9	First night of classes: part-time courses.
February	25	Registration: apprenticeship programs.
April	1	First registration night: part-time courses.
April	12	Good Friday; College closed.
April	15	Easter Monday; College closed.
April	22	Registration: apprenticeship programs.
April	26	Completion of two-year technician programs.
May	27	Victoria Day; College closed.
June	14	Completion of technician and technologist year.
July	1	Canada Day; College closed.
August	2	Completion of two-year technologist programs.
August	5	Civic holiday; College closed.

1974 (Continued)

August	2	Completion of two-year technologist programs.
August	5	Civic holiday; College closed.

1973



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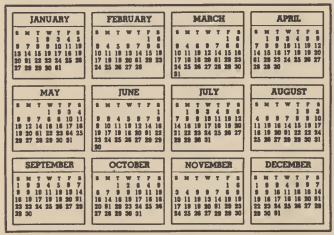

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

THE COLLEGE

On March 1, 1968, the George Brown College of Applied Arts and Technology was officially named; it comprised the former Provincial Institute of Trades and the former Provincial Institute of Trades and Occupations. It is fitting that the College, whose programs for the first time offer the post-secondary student an exciting and universally accessible alternative to a university education, should receive its name from George Brown, the Reformer, whose continuing fight was against the social prejudice of the time and an established elite, bent on withholding from the common man his rightful freedom to shape his own destiny, both political and personal. It is appropriate also that, 124 years to the day after the founding of that mighty organ of free speech, the Globe, this College should derive its name from the man whose very voice and footsteps must have been well-known to the sod on which our downtown campus stands!

THE CAMPUS

In December, 1969, the Board of Governors of the George Brown College adopted a master plan; this plan was based on the concept of a multi-campus college, with programs integrated to satisfy the needs of the community.

At present the College operates five campuses located within the City of Toronto. A new complex of buildings is nearing completion at the Casa Loma site. It is expected that, within two or three years, the entire College operation will be settled in three areas: the Casa Loma Campus, the Kensington Campus and a downtown campus.

PROGRAMS OF STUDY

The George Brown College offers almost 200 programs leading to vocational competence, official certification, academic upgrading, and general enrichment. While it is acknowledged that certain standards of proficiency in particular areas of study are necessary for employment, it is also recognized that each student brings to the College certain established abilities, and that individual needs vary widely. This Calendar describes programs and component courses of study which lead to particular vocations; most students are likely to undertake one of these prescribed programs; yet some may choose to take advantage of the high degree of flexibility provided and arrange one of the following variations:

1. Take an enriched program by adding to it another course.
2. Take a light program by omitting one or two courses.
3. Substitute courses for those within a program for which exemption or credit has been granted.
4. Take one or two courses at a time, with a view to building program credit and certification; part-time courses are the most popular way of doing this and a calendar is available from the College on request.

When a course of study has been successfully completed, a certificate is issued: diplomas are granted when the requirements of a program of study have been fulfilled.

In order to meet the changing needs of the community, new programs are constantly being developed and current courses revised and updated. As is the case in all post-secondary institutions, all programs are subject to change without notice and will be given only if there is sufficient enrolment. The College also reserves the right to suspend or cancel any course or program, when enrolment is insufficient or employment opportunities appear inadequate.

ADMISSION PROCEDURES

Secondary school students intending to enter the George Brown College are advised to consult, during the fall term, with a guidance counsellor, who will supply information and application forms.

The general public may obtain information and application forms by writing to the George Brown College, P. O. Box 1015, Station B, Toronto, Ontario, M5T 2T9, or by telephoning (416) 967-1212 and asking for 'Information'.

Application forms must be accompanied by ONE of the following documents:

1. An official transcript of all secondary school marks, showing the necessary credits and grades for admission to the desired program.

OR

2. A statement from the secondary school principal stating that the applicant is expected to obtain the necessary credits and grades for admission to the desired program; this statement must be confirmed by an official transcript of marks, when it becomes available.

Applicants frequently write to obtain additional information, but neglect to mention the name of the program applied for; to ensure a prompt reply, an applicant should state the name of the program each time he communicates.

Applications are assessed by a Board of Admissions, who are empowered to accept, defer, or reject any candidate's application for admission to any program, or to recommend an alternate program for any candidate whose qualifications, in the opinion of the Board, are not adequate to satisfy the demands of the program which the candidate wishes to pursue.

Academic Upgrading

Students who are otherwise acceptable for a program, except that they do not have standing in all of the required academic subjects, may apply at the George Brown College for college preparatory courses in the subjects they are lacking; these preparatory courses are available throughout the entire year and further information may be obtained by telephoning the information service of the College.

Probationary Status

Students whose applications have been accepted but whose qualifications fall somewhat short of the published prerequisites for a program, as well as students who have been re-admitted after a failure (a grade point average

of less than 2.0) are placed on probationary status. A probationary student's position will be re-assessed by the end of the first semester. For more detailed information, consult the campus registrar.

Transfer Credits

Students who wish to have courses successfully completed at other institutions credited to their program at the George Brown College must apply in writing to the campus registrar by the end of the first week of their program; such work will be evaluated and credited to their program, when applicable.

ADMISSION REQUIREMENTS

1. Programs of Two Years or Longer

The Ontario Secondary School Graduation Diploma is the minimum admission requirement. Applicants from other provinces and other countries must submit evidence of equivalent standing. Certain programs require a personal interview, demonstration of special talents, or proof of acceptable standing in specific subjects.

2. Programs of One Year or Less

(a) As stated in the program description.

(b) Many of the programs in this category are available under the provisions of the Ontario Manpower Retraining Program, a government-subsidized educational program for adults; such programs are designated by the OMRP code. Application for programs under the provisions of OMRP must be made through the Canada Manpower Centre closest to the applicant's home address.

3. Admission as a Mature Student

Applicants 19 years of age or older, who do not have the stated admission qualifications but who appear to possess the capacity and maturity to succeed, may be accepted in an appropriate program as probationary students.

4. Admission with Advanced Standing

The College may grant advanced standing for college-level study completed at other accredited institutions. Applicants' requests for advanced standing must be supported by official transcripts from the institution where the standing was obtained and should be submitted simultaneously with the application for admission to the George Brown College.

5. Priority of Admissions

Applicants will be admitted in the following order of preference:

1. Permanent residents of Ontario.
2. Permanent residents of other Canadian provinces.
3. Overseas students from Commonwealth countries.
4. Students from foreign countries.

6. Applicants from Foreign Countries

Applicants other than Canadian citizens and landed immigrants are not eligible for apprenticeship programs and are not eligible for Ontario Manpower Retraining Programs (OMRP).

Students from foreign countries are eligible to apply for any post-secondary program offered by the College. If the foreign applicant's mother tongue is not English, then proof of proficiency in English must be presented by submitting the results from either the Michigan English Language Test or the Test of English as a Foreign Language. After the student has received a letter of acceptance from the George Brown College, he must obtain a student visa; this may be accomplished by obtaining a student application for temporary admission to Canada from the Canadian embassy or consulate in the applicant's country, or by writing to the Department of Manpower and Immigration, Immigration Division, Ottawa, Canada, K1A 0J9.

In addition to good character, good health, and proof of acceptance into the George Brown College, immigration authorities must be provided with evidence of sufficient funds to pay living and school expenses for at least one year. The George Brown College cannot assume financial responsibility for students whose funds prove inadequate. Student visa holders should not count on part-time or summer employment in Canada to pay for school expenses. Immigration regulations stipulate that students in Canada with only temporary status cannot accept employment without written permission from their immigration officer.

7. Identification Cards

Identification cards, which may be used as proof of enrolment in the George Brown College, are issued to students at the time of registration.

8. Mutual Responsibility Agreement

The acceptance of a student at the George Brown College of Applied Arts and Technology constitutes an agreement of mutual responsibility. The student's part of the agreement is to accept established College rules and practices, to respect the laws of the City and the Province, and to act in a responsible manner appropriate to these rules, practices, and laws. The College's part is to provide an environment that encourages student growth and development. The College recognizes that most students accept and fulfil their part of the agreement. When a student is persistently irresponsible, however, disciplinary action must be taken on the part of the College.

FEES

POST-SECONDARY PROGRAMS

The normal academic year consists of two semesters. The fee schedule for all programs is as follows:

First semester.....	Confirmation.....	$ 35
	Balance of tuition.....	$100
Total of first semester fee.....		$135

Second semester.....Tuition.....$125
Total for academic year.....$260

The first semester confirmation fee of $35, which includes a $10 registration fee, must be paid within three weeks of notice of acceptance; it guarantees the student a place in the program and is not refundable. The balance of the first semester tuition fee must be paid in full before the student is permitted to register or to enter classes.

The second semester fee must be paid in full before the end of the first semester.

Applicants from countries other than Canada are required to pay the total fees for the complete academic year two months in advance of the program's registration date; these fees, which include a $35 non-refundable confirmation fee, amount to $260 (e.g., fees must be paid by July 1st for September 1st registration).

All fees must be paid in cash, by money order or by cheque made payable to the George Brown College.

There will be no refunds after the seventh day of scheduled classes.

This fee schedule is subject to revision without notice.

Fees for programs of less than one normal academic year are calculated on a pro rata basis; information about fees for such programs may be obtained from the registrar.

ADDITIONAL EXPENDITURES

The cost of textbooks, instruments and supplies is additional to the tuition fee and varies, according to the program, from $40 to $100. Students are urged to use the facilities of the campus bookstore where items are sold on a non-profit basis.

Students who wish to keep projects constructed in the College must pay for the materials.

ONTARIO MANPOWER RETRAINING PROGRAMS (OMRP)

Eligible persons may apply for enrolment in programs designated by the OMRP code, as fee-paying students, on the basis of $5 per week. These fees are payable one month in advance, in payments of not less than $20; such fees are subject to alteration, in keeping with change in government policy.

These fees are not refundable.

Books and supplies for these programs are on loan at no cost to the student.

EQUIVALENT STANDING

Applicants from another province or country are required to submit evidence of equivalent standing. The following certificates are recognized as being equivalent to the Ontario Secondary School Graduation Diploma and may be accepted if applicants satisfy the other admission requirements:

British Columbia:	Junior Matriculation (Grade 12)
New Brunswick:	Junior Matriculation (Grade 12)
Alberta:	Junior Matriculation (Grade 11)
Saskatchewan:	Grade 11
Manitoba:	Grade 11
Quebec:	Quebec High School Leaving or McGill Junior Matriculation
Nova Scotia:	Junior Matriculation (Grade 11)
Prince Edward Island:	First Class Licence or Second Year Certificate of Prince of Wales College
Newfoundland:	Grade 11

REGISTRATION DATES

The normal commencement date of the academic year is the Tuesday immediately following Labour Day; nonetheless, other beginning dates are sometimes set at other times of the year; for such information, telephone (416) 967-1212.

GRADING

The following system of grading is used to indicate the quality of a student's work:

Grade	Meaning	Point Value
A	excellent	4
B	good	3
C	average	2
D	below the average	1
F	failure	0
WP	withdrawn while passing	
WF	withdrawn while failing	
K	incomplete	

A course in which a student has failed must be repeated, if credit is desired. The grade of K is given only in cases of illness or other extenuating circumstances; it permits the student, after consultation with the department head, to complete the work within a reasonable period of time.

PROGRAM EVALUATION

It is generally conceded that, in a program of study, some courses are more important than others in reaching the program's goal. For example, in the watchmaking program, the course which teaches watchmaking skills is likely a much more important course in the training of a watchmaker than the small business management course; and yet both courses are important. In assessing a student's progress in the watchmaking program, then, it would not be right to assign the same value to small business management as to watchmaking skills. In fact, the experts assign to watchmaking skills a value symbolized by the number 12 but to small business management a value symbolized by the number 2. The name attached to the number 12 and the number 2 is credit units. A credit unit, therefore, is a number used to indicate a course's relative value or weight in the program.

Each course is assigned a credit unit value related to the number of teaching hours per week, the amount of practical training time, and perhaps

other factors. For example, in the electronic data processing program, the course known as EDP 101 Introduction to Computer Programming (Cobol) is assigned a value in the program of 4 credit units. The point value of the grade achieved by a student is multiplied by the number of credit units to determine grade points: e.g.,

EDP 101 - Grade achieved B
Point value of B is 3
Grade points = 3 (point value of B) x 4 (credit units) = 12

The total grade points earned in all courses divided by the total credit units for all courses yields the grade point average for the program.

THE REPORT CARD

Suppose that Alice Albright has completed 6 weeks of the 12-week typing refresher program. Here is her report card:

	Grade	Point Value		Credit Units		Grade Points
Typing	A	4	x	8	=	32
Language & Communication	B	3	x	6	=	18
Office Practice	C	2	x	3	=	6
Business Machines	C	2	x	3	=	6
				20		62

Grade Point Average = $\frac{62}{20}$ = 3.1

Alice has achieved an honour average.

GRADE POINT AVERAGE

The grade point average is used to assess performance in a program. To determine the grade point average (GPA), divide the total grade points by the total credit units of the program.

$$GPA = \frac{\text{Total Grade Points (see glossary)}}{\text{Total Credit Units}}$$

A minimum grade point average of 2.0 is needed to complete a program successfully. Students may repeat courses in which a failing grade (F) or a below-the-average grade (D) has been scored. Honour standing is awarded to students who attain a grade point average of 3.0 or more.

PROMOTION OF STUDENTS WHO HAVE FAILED ONE OR TWO COURSES

1. A student who has failed a course is permitted to pursue in the following year the courses he has successfully completed.

2. A student with a grade point average of 2.5 or more may apply to pursue one failed course in the following year.

3. A student with a grade point average of 3.0 or more may apply to pursue two failed courses in the following year.

4. A student may modify a standard program by making application for enrolment in his own selection of courses. On successful completion of any course, a certificate will be issued; however, a student receiving any number of such certificates will not receive a diploma until he has completed a prescribed program.

GLOSSARY

1. Certificate: a document certifying the successful completion of a prescribed program less than 4 semesters in length.

2. Course: a teaching-learning unit, several of which comprise a program.

3. Credit unit: a number used to indicate a course's relative value or weight in a program.

4. Core courses: compulsory courses within a prescribed program.

5. Diploma: a document certifying the successful completion of a prescribed program of 4 semesters or more in length.

6. Elective: a course which a student may choose for study.

7. Endorsement: credits for additional courses taken in addition to the prescribed program: the credit appears on the face of the certificate or diploma earned.

8. Grade points: the product of the grade point value x the credit units.

9. Grade point average (GPA): the quotient derived when total grade points earned are divided by total possible credit units. Courses for which exemptions have been granted are not included in the calculation of the GPA.

10. Hour: one period on the timetable.

11. Options: alternative courses within a prescribed program; under certain circumstances, options and/or electives may be chosen, with the recommendation of the department chairman.

12. Program: a teaching-learning unit composed of several courses.

13. Relationship of program length to program number: the length of a program is indicated by the number of that program, e.g., programs of 4 semesters or more are numbered 1-39; programs of less than 4 semesters are numbered 40-69; programs of only 1 session are numbered 70-99.

14. Semester: a course length of 14 to 26 weeks.

15. Session: a course length of less than 14 weeks.

STUDENT SERVICES

The student services office administers a wide variety of activities directly related to students' well-being; these include a health centre on each campus, athletics and recreation, counselling services, financial assistance, living accommodation, OHIP, placement, and student organizations.

A HEALTH CENTRE is located on each campus, staffed by registered nurses, with a physician available for consultation on an appointment basis. Students are requested to complete a health history form, and medical examinations are required for admission to some programs.

Services available include health counselling, health education programs, emergency care, supportive care following minor injuries and illness, immunization against tetanus, poliomyelitis and smallpox; and referrals to medical facilities, campus counselling services, or community agencies.

Free chest x-ray facilities are provided by the Toronto Chest Clinic for students who have not had a recent chest x-ray or tuberculin test; forms and detailed information are available at the campus health centre.

ATHLETICS is a program in which every student is eligible to participate. The athletic director operates an intramural program of inter-class competitions involving touch football, floor hockey, basketball, pushball, baseball, etc. The College, as a member of the Ontario Colleges Athletic Association, competes in various inter-college sports, such as basketball, volleyball, soccer, and hockey on an exhibition basis.

The athletic department also organizes a variety of recreational club programs such as the scuba club, the archery club, the table-tennis club, the curling club, the tennis club, the yoga club, etc. Clubs for any athletic activity may be organized by calling a meeting of interested students, electing officers, and submitting a constitution to the athletic director for approval.

All students who participate in intramural or inter-college athletics are reminded of their responsibility to provide their own medical and hospital insurance coverage, under the provisions of the Ontario Hospital Insurance Plan. The College provides supplementary coverage for specific injuries, under a special insurance policy.

COUNSELLING SERVICES are available on each campus to provide educational, vocational, and personal counselling on request; further information may be obtained by telephoning (416) 967-1212.

FINANCIAL ASSISTANCE under the terms of the Ontario Student Awards Program or of the Canada Student Loans Plan may be available for applicants for admission to a post-secondary program, who are Canadian citizens or landed immigrants, having resided in the country for at least 12 consecutive months prior to enrolment. Loans awarded under the Plan are interest-free until six months after graduation or termination of study, and no repayment is required as long as the recipient is enrolled as a full-time student. Further information and application forms for student financial assistance are available at all secondary schools and from the Student Services Office, telephone 967-1212.

LIVING ACCOMMODATION information is available by dialling (416) 967-1212. Although residence accommodation is not provided by the College, there is no shortage of boarding and rooming facilities in Toronto; rates vary from $25 to $30 per week for room and board.

OHIP coverage is the responsibility of each student; students without such coverage must be prepared to pay all medical and hospital costs arising from illness or injury; such expenses can amount to $75 to $100 per day. Information and forms are available at the campus health centre. Until students are eligible for the Ontario Health Insurance Plan, they are urged to make arrangements for coverage with private insurance companies.

PLACEMENT in employment is promoted by arranging interviews with prospective employers; the College staff is ready at all times to assist the graduating student in assembling career information, preparing for an interview, and arriving at decisions. It should be noted, however, that the George Brown College does not guarantee placement in a position.

STUDENT ORGANIZATIONS exist on each campus; they are self-governing and provide a variety of services such as the following:

1. The creation of a forum for free discussion and democratic exchange of ideas.
2. The provision of a ready channel for communication to administration of student requests or grievances.
3. The organization of student activities and services.

A college-wide council composed of representatives of each campus meets periodically to deal with matters of an inter-campus nature and to serve as an advisory committee to the college administration.

CAMPUS FACILITIES

A BOOKSTORE is operated on each campus on a non-profit basis to all students. All course requirements of books, stationery, and supplies may be purchased at prices usually well below those at retail stores. Besides these items, the bookstores sell sweaters, jackets, college rings, and a few souvenir articles. All purchases must be made in cash and personal cheques are not accepted.

A CAFETERIA is located on each campus and is open Monday through Friday. Both hot and cold dishes are available from October to May. During the summer months, a more limited service is provided.

A LIBRARY is located on each campus. The aim of the library is to provide a carefully chosen collection of material related to the growing range and complexity of college programs: such materials include a selection of periodicals and reference journals, as well as magazines for browsing. Library hours on each campus are:

Monday through Thursday:	8:00 a.m. to 9:00 p.m.
Friday:	8:00 a.m. to 6:00 p.m.

Students are invited to use the library facilities at any time during these hours for reference, borrowing, study, or relaxation.

PARKING space is not provided for students by the College. Students are urged to travel by GO train or T. T. C. buses and subway, whenever possible. Transportation on the GO trains is available at reduced rates for students in full-time attendance for more than 12 consecutive weeks; further information may be obtained by telephoning (416) 248-3112 or consulting the campus registrar. The cost of a one-way T. T. C. ticket, which permits passage anywhere in Metropolitan Toronto, is 25 cents.

THE 2700-HOUR TECHNOLOGY PROGRAM (3 YEARS IN 2)

1. Length of Program: 2700 hours (6 modules of 15 weeks)

2. Admission Requirements: The Ontario Grade 12 with standing above the average in mathematics and science.

3. Program for academic years 1972/73
   1973/74

   1972/73

Module 1	September 12/72	December 22/72
Module 2	January 2/73	April 19/73
Module 3	April 24/73	August 3/73
Summer Break	August 4/73	September 4/73

   1973/74

Module 4	September 5/73	December 21/73
Module 5	January 2/74	April 12/74
Module 6	April 15/74	July 26/74

4. Module 1 is common to the technician and the technologist programs. Outstanding performance in the first module may qualify technician students to transfer to the technology program for the second module; technology students who do not achieve technologist standing may transfer to the technician program. Note that there are two distinct programs:

   (i) The technician program with one set of admission requirements.
   (ii) The technologist program with a set of higher admission requirements.

5. The 'three years in two' option applies to the following programs: Electrical Technology, Electronics Technology, Instrumentation Technology, and Survey Technology.

6. Upon satisfactory completion of the technologist program, a student will receive the George Brown College Diploma indicating proficiency in the technology concerned.

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Academic Upgrading (Basic Training for Skill Development - BTSD)
GBC CODE: AU41, 42, 43
OMRP CODE: 401, 402, 403

AU41 - designed for persons who wish to develop their basic literacy and computing skills for entry into skill training courses or for entry into AU42.

- prerequisite is the ability to communicate orally in English

College Street Campus, up to 52 weeks. Fee: $5.00 per week

CONTENT:

ENG142	Language & Communication	30 periods per week
MATH142	Mathematics (Arithmetic)	

AU42 - designed to prepare persons for entry into Colleges of Applied Arts and Technology commercial or technical programs that require the equivalent of Grade 10, or for advancing to AU43.

- prerequisite: Grade 8 or equivalent of AU41

College Street Campus, up to 52 weeks. Fee: $5.00 per week

CONTENT:

ENG146	Language & Communication	
MATH146	Mathematics	30 periods per week
SC146	Physics, Chemistry, Biology	

AU43 (College Preparatory) - designed to prepare persons for entry into Colleges of Applied Arts and Technology programs that require Grade 12 equivalent. Students successfully completing this program may apply to the Ministry of Education for credit towards a Secondary School Graduation Diploma.

- prerequisite: Grade 10 equivalent or AU42.

Teraulay Campus, up to 52 weeks. Fee: $5.00 per week

CONTENT:

ENG147	Language & Communication
MATH147	Mathematics
SC147	Physics, Chemistry, Biology

NOTE: The foregoing courses are offered on an individualized, continuous-intake basis.

Courses in the social sciences and life skills may be offered, when circumstances allow.

PROGRAM: English as a Second Language
LOCATION: College Street Campus
LENGTH: 24 weeks maximum
CERTIFICATION: Letter
PREREQUISITE: None

GBC CODE: LT40
OMRP CODE: 408
FEES: $5 per week

GENERAL INFORMATION:

The aim of this program is to provide the adult New Canadian with a level of fluency in English that will allow him to obtain appropriate employment.

The course emphasizes oral performance. The development of literacy skills is fostered to the degree relevant to the student's background and goal.

PROGRAM: English Language for Provisional Tradesmen
LOCATION: Teraulay Campus
LENGTH: 44 weeks (part-time)
CERTIFICATION:
PREREQUISITE: Provisional certificate of qualification and recommendation by the Industrial Training Branch, Ministry of Colleges and Universities

GBC CODE: LT71
FEES: $5 per week

GENERAL INFORMATION:

This course is designed to enable the immigrant to master sufficient English to pass the trade examination set by the Industrial Training Branch of the Department of Colleges and Universities in order to earn the Certificate of Qualification in his trade. The second, but equally important, aim is to give him enough English to enable him to pursue instruction in areas of his trade relevant to its practice in Canada, in which his background may not be sufficient to meet Canadian standards.

PROGRAM CONTENTS:

Phase I General English proficiency - 32 weeks
Phase II The language of specific trades - 12 weeks

PROGRAM: Child Care Worker
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 minimum, preferably experienced with groups of children; mature personality with broad life experience; personal interview necessary; minimum age of 18 years.

GBC CODE: AP1
FEE: $260 per year

GENERAL INFORMATION:

Child care workers are responsible for the twenty-four hour care of disturbed children, six years of age to the end of adolescence, living away from their homes. Practical experience is gained through field work, when students are under the direction of skilled supervisors, who advise and guide them in their care of disturbed children.

Child care workers find employment in provincial institutions, treatment centres, private social agencies, group homes and hospitals.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II	Hours per week
CHI160	Field Practice	24
CHI161	Human Growth and Development	2
CHI162	Health and First Aid (1/2 year)	1
CHI164	Caring for the Disturbed Child	2
CHI165	Creative Activities with Children	2
CHI166	Social Services (1/2 year)	1
CHI167	Student Group Seminar	1
CHI169	Introductory Psychology (1/2 year)	1
CHI171	Introductory Sociology (1/2 year)	
CHI170	Reading Seminar	1
		35

SECOND YEAR	Semesters III & IV	
CHI260	Field Practice	24
CHI261	Psychopathology of Childhood	2
CHI262	Caring for the Disturbed Child/Adolescence	2
CHI265	Activities with Children (Water Safety)	1
CHI267	Student Group Seminar	
CHI268	Treatment Philosophies	2
CHI269	Professional Development (1/2 year)	1
CHI271	Therapeutic Programming (1/2 year)	
CHI270	Group Process	2
CHI273	Social Problems	1
CHI274	Independent Study	1
		36

PROGRAM: Dental Technician
LOCATION: Casa Loma Campus
LENGTH: 3 Years
CERTIFICATION: Diploma
PREREQUISITE: A minimum of Grade 12 with chemistry and physics; in addition, candidates should either have or develop a high degree of manual dexterity.

GBC CODE: AP2
FEES: $260 per year

GENERAL INFORMATION:

The dental technician may be employed by one dentist or he may operate a laboratory alone; he may be the owner of a laboratory employing a few or more technicians or he may be an employee in a laboratory owned by an individual or a firm.

With the guidance and advice of a committee representing both the Royal College of Dental Surgeons of Ontario and the Governing Board of Dental Technicians, a 3-year program of studies is provided. This will include the theory and practice of all aspects of dental laboratory work and will include a related subject program designed to give insight into the problems of small business management.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II	Hours per week
DENT100	Dental Lab. and Lec. 1	19
DENT101	Dental Materials	1
DENT102	Dental Anatomy	1
ENG100	Language & Communication	2
DENT103	Science of Dental Materials	2
CHEM107	Chemistry	2
EC100	Economics	1
MATH107	Technical Mathematics	2
		30
SECOND YEAR	**Semesters III & IV**	
DENT200	Dental Lab. and Lec. 11	23
ES211	Elective Studies	1
MET200	Metallurgy	2
MATH207	Business Mathematics	1
CHEM207	Chemistry	2
EC200	Economics (Semester II)	1
		30
THIRD YEAR	**Semesters V & VI**	
DENT300	Dental Lab. and Lec. 111	30
		30

PROGRAM: Addiction Counsellor
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Generally restricted to older student with volunteer welfare experience, post high school work, or both. A good command of English is needed, both verbal and written. Grade 12 is a prerequisite but those with the ability to cope beyond this level, and mature men and women with a good life experience are needed for this emotionally demanding work. Stable energetic people, relatively free from personal problems, who communicate well on a feeling level and who show warmth and empathy, are given the highest preference. Applicants may be drawn from people with widely differing experience: the home, recent school graduation, the ministry, nursing, volunteer work, business, industry and other fields. Course given on alternate years. Next admission, 1973.

GBC CODE: AP3
FEES: $260 per year

The process of student selection involves group interviews with both staff and members of the graduating class, and while not the determining factor, these interviews are mutually helpful in reaching a decision on admission.

All enquiries and requests for interviews should be directed to the Registrar, Kensington Campus, P.O. Box 1015, Station B., Toronto, Ontario M5T 2T9. When requesting an interview, please include an autobiographical sketch and indicate why you are interested in taking this course.

GENERAL INFORMATION:

Addiction Counsellors are trained to be counsellors in the mental health field with a special expertise in problems related to drug (including alcohol) dependencies; a variety of individuals, agencies, and the community require their services.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II	Hours per week
AD100	Field Practice	16
AD101	Human Growth & Behaviour	2
AD102	Group Process	2 1/2
AD103	Social Services (September - December) Community Interaction (January - June)	2 1/2
AD104	Physiology & Pharmacology	1
AD105	Historical Review of Man's Dependence on Chemicals	2
AD106	Theory, Methods & Practice of Therapy	4
AD107	Introductory Sociology	2
		32

PROGRAM: Addiction Counsellor (Continued)

SECOND YEAR	Semesters III & IV	Hours per week
AD200	Field Practice	24
AD202	Group Process	2
AD203	Community Interaction (September - December) Independent Studies (January - June)	2
AD206	Theory, Methods & Practice of Therapy	2
AD207	Sociology	2
AD201	Abnormal Psychology	2
AD209	Professional Development	2
		36

PROGRAM: Day Care Worker
GBC CODE: AP5
LOCATION: Kensington Campus
FEES: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 minimum, preferably experienced with infants and very young children; mature personality with broad life experience; personal interview necessary.

GENERAL INFORMATION:

The increasing provision of day care facilities for infants by Metro Toronto Social Services and by independent provincially accredited organizations indicates that employment prospects are excellent. It should be noted that this program has been designed for individuals who have a very special interest in the provision of quality-and family-oriented day care services.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II	Hours per week
DCW100	Infant and Child Development	2
DCW101	The Infant's Physical Health, Well Being & First Aid	1
DCW102	Introductory Psychology	1
DCW103	Mental Health	1
DCW104	Principles of Day Care	2
DCW105	Creative Expression in Childhood	2
DCW106	Introductory Sociology	2
DCW107	Professional Development	1
DCW108	Legislation and Community Services	1
DCW109	Nutrition and Food Management	2
DCW110	Special Studies	2
DCW111	Tutorials	1
DCW112	Field Practice	12
		30

SECOND YEAR	Semesters III & IV	
DCW200	Human Growth and Development	2
DCW201	Children with Special Needs	1
DCW202	Cognitive Development	2
DCW204	Varieties of Day Care	1
DCW204	Planning and Management	1
DCW206	Family Dynamics	1 1/2
DCW207	Parent Interviewing and Counselling	1 1/2
DCW208	Group Process	1
DCW210	Tutorials	1
DCW211	Field Practice	18
		30

PROGRAM PENDING: Denture Therapist
LOCATION: Casa Loma Campus FEES: $260 per year
LENGTH: 1 Year
CERTIFICATION: Diploma
PREREQUISITE: Proof of qualification as registered dental technician (Ontario) or equivalent

PROPOSED COURSE OF STUDY OUTLINE

The denture therapist, as stated in the Ontario Government Bill 246, will be the new auxiliary of the dental team responsible for the fabrication of all removable prosthetic appliances. This includes taking impressions of all kinds, bite registration, fitting, finishing, and post-insertion adjustments of prosthetic devices. It is, therefore, imperative that all therapists be formally trained or be registered dental technicians.

The proposed course for denture therapists:

1. All applicants shall have a minimum of Ontario grade 12 or equivalent, with a science background: chemistry, physics, and biology.

2. All applicants for the therapist course shall be fully trained in all areas of dental technology; this will require either two years of formal training or proof of certification as a registered dental technician (Ontario).

   Candidates who are able to fulfil this prerequisite will be permitted to complete a one-year course in denture therapy; during this year the student will be trained in the following areas:

Intra-Oral Clinical Procedures

Candidates will construct a minimum of eight complete maxillary and mandibular dentures, using a detailed sequence of appointments, after patient interview, examination, and diagnosis.

Dental Laboratory

Additional laboratory procedures for construction of immediate single and partial dentures. Candidates will construct a combination cast gold, wrought acrylic base removable partial dentures.

Ethics and Orientation

Every province has laws regulating the practice of dentistry. Dental laws are enacted to protect the health, safety and welfare of the public and such laws are deemed to be in the public's interest.

Pharmacology

Introductory lectures on drugs applicable to prosthetic procedures; classification and characteristics of drugs; drug control and the law.

PROGRAM PENDING: Denture Therapist (Continued)

Radiography

Introduction: purposes and uses; responsibilities of the denture therapist.

Dental Anatomy

Similar in detail to that taught in the dental technology course, i.e., a series of lectures dealing with the basic and fundamental anatomy of teeth and related structures.

Equipment Maintenance & Repair

Principles of clinical/laboratory equipment maintenance.

Patient Management

Patient emotions related to prosthetic dentistry: emotionally stressed patient, patient friends, and the normal patient. Management of difficult patients: gagger, handicapped, hospitalized, etc.

Dental Office Emergencies (First Aid)

Introduction and responsibility; general first aid procedures: examine, patient position, establish airway, bleeding, breathing, shock, seek assistance.

Personal Hygiene & Grooming

Since the dental prosthetic therapist is a part of the health team, he must prove himself competent in his specific area, and be very aware of his responsibilities to the profession and the public, during and at the conclusion of his training. The quality and method of work, his character and conduct should be on par with that demonstrated by other members of the dental team. Our primary objective, therefore, is to make the learning situation as close as possible to the actual work situation in the dental office.

PROGRAM PENDING: Community Worker
LOCATION: Kensington Campus FEES: $260 per year
LENGTH: 1 Year
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 minimum, preferably with experience in community service; mature personality with broad life experience; personal interview necessary; minimum age of 18 years.

GENERAL INFORMATION:

Community workers are involved in preventive mental health and will be involved in recreation in the broadest sense, basic counselling, crisis intervention, family life and neighbourhood issues.

Practical experience will be gained through supervised field work.

Graduates will find employment in a wide range of community based agencies such as youth clubs, community centres, settlement and neighbourhood houses, hostel programmes, O.H.C. projects, half-way houses and drop-in centres.

PROGRAM CONTENTS:

Semesters I & II

CW100	Field Work
CW101	Working with Families
CW102	Programming Theory and Practice
CW103	Group Dynamics
CW104	Environmental Studies
CW105	Community Resources
CW106	Interviewing and Counselling
CW108	Human Growth and Development
CW109	Introductory Psychology
CW110	Introductory Sociology
CW111	Political Science
CW112	Communication and the Media

PROGRAM: Dental Assistant GBC CODE: AP41
LOCATION: Casa Loma Campus FEES: $260 per year
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12 of the four or five year program with English, mathematics, and at least one science; typewriting proficiency of 30 wpm, or requirement to enrol in typing course; personal interview necessary.

GENERAL INFORMATION:

The graduate of this program will have received a background in the dental sciences, operating room assistance, dental materials and limited dental laboratory methods, dental X-ray techniques, as well as business procedures that will allow her to function as an effective member of the dental team.

Since the Dental Assistant is in constant contact with the public, she should have poise and an outgoing personality.

PROGRAM CONTENTS:

Semester I

		Hours per week
DENT104	Basic Health Science	5
DENT102	Dental Anatomy	2
DENT105	Dental Laboratory	3
DENT106	Dental Materials	1
DENT107	Dental Assisting	7
PSY205	Psychology	1
DENT108	Professional Development	1
OP114	Office Practice	3
ENG110	Business Eng. & Correspondence	1
OP114	Bookkeeping	2
DENT105	Tooth Anatomy	1
		27

Semester II

DENT107	Dental Assisting	6
DENT102	Dental Anatomy	2
DENT109	Dental Radiology	3
DENT105	Dental Laboratory	3
OP114	Office Practice	5
DENT111	Clinical Practice	4
DENT102	Dental Materials	2
DENT110	Professional Development	1
OP110	Language and Communication	1
		27

PROGRAM: Hospital Orderly (Training) GBC CODE: AP50
LOCATION: Kensington Campus OMRP CODE: 627
LENGTH: 20 Weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Candidate must have Grade 10 or equivalent standing.
All students must have a working knowledge of English.

GENERAL INFORMATION:

The hospital orderly works under the direction of the professional nurse, caring for male patients, with special emphasis on individual care. Professional preparation includes self-knowledge and attention to personal health and well-being; this focus moves from self to others and from health to illness. The emotional and physical demands of his work require a hospital orderly to have a tactful and pleasant manner and ability to work with others and to be adaptable.

PROGRAM CONTENTS:

H0130 Hospital Organization and Routines
H0131 Patient Care & Mental Health
H0132 Nursing Procedures and Skills & First Aid
H0133 Anatomy and Physiology (systems and approach)
H0134 Nutrition and Dietetics
H0135 Practical Work in Hospital
PHYS150 Science

PROGRAM: Nursery Aide GBC CODE: AP51
LOCATION: Kensington Campus OMRP CODE: 429
LENGTH: 16 weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GENERAL INFORMATION:

The nursery aide is engaged in the actual care and guidance of pre-school-age children, under the direction of a qualified nursery supervisor in a nursery school or day nursery. Knowledge of the basic aims and procedures of routine and play activities in different types of nurseries is essential, as well as a knowledge of young children. Physical stamina and good health are required, as it is often necessary to lift a child or move materials and equipment. Because the adults in a nursery must work well together, it is essential that positive mental health habits are practised.

In order to gain practical experience and to have the opportunity to observe young children, students are placed in day nurseries in the community.

PROGRAM CONTENTS:

NA130 History of Preschool Education
NA131 Types of Nursery Settings
NA132 Guidance Methods
NA133 Programs - Routine and Play
NA134 Staff Relationships
NA135 Child Development
NA136 Mental Health - Psychology
NA137 First Aid
NA138 Field Practice
NA139 Creative Activities with Children

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Air Conditioning Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR1
FEES: $260 per year

GENERAL INFORMATION:

The air conditioning technician has a specialized working knowledge of the design, installation and operation of air conditioning systems in residential, commercial and industrial buildings.

There are many challenging opportunities in the air conditioning industry for trained technicians interested in occupations such as sales promotion, system design, job estimating, contract supervision and sustem balancing.

PROGRAMS CONTENTS:

FIRST YEAR	Semester I	Hours per week
AIR100	Refrigeration	10
AIR105	Air Conditioning	7
AIR108	Instrumentation	2
EL100	Electrical Fundamentals	3
DR124	Drafting	2
MATH100	Mathematics	3
PHYS100	Physics	2
ENG100	Language & Communication	2
		31

FIRST YEAR	Semester II	Hours per week
HT104	Heating	8
AIR105	Air Conditioning	7
AIR107	Hydronic Heating	2
AIR109	Electrical Fundamentals	3
DR124	Drafting	2
MATH100	Mathematics	3
PHYS100	Physics	2
ENG100	Language & Communication	2
		29

SECOND YEAR	Semester III	
HT144	Heating	5
AIR203	Air Conditioning Systems	9
AIR201	Automatic controls	3
WELD145-6	Welding	2
DR232	Drafting	4
PHYS202	Physics/Thermodynamics	2
ENG200	Language & Communication	2
		30

SECOND YEAR	Semester IV	
MATH200	Mathematics	3
ENG200	Language & Communication	2
PHYS202	Physics/Thermodynamics	2
AIR200	Refrigeration	7
AIR201	Automatic controls	3
AIR203	Air Conditioning Systems	9
AIR205	Estimating	4
		30

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Survey Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR2
FEES: $260 per year

GENERAL INFORMATION:

The survey technician program provides the basic theoretical and practical knowledge required for those who wish to enter surveying at the technician level.

Upon graduation a student will have a variety of positions from which to choose. He may be a draftsman, or a surveyor in legal, control and engineering surveys. He may be working in southern Ontario or helping to develop the mid-Canada corridor. However, no matter what he chooses, he will be part of a team in one of Canada's most challenging and exciting fields.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials & Methods	12
DR120	Descriptive Geometry	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	Hours per week
DR121	Descriptive Geometry	2
SURV100	Survey Computations & Drafting	8
SURV101	Plane Surveying	8
MATH100	Mathematics	5
ENG100	Language & Communication	2
PHYS100	Applied Physics I	5
		30

PROGRAM: Survey Technician (Continued)

SECOND YEAR	Semester III	Hours per week
CIV202	Municipal Services	4
SURV200	Survey Computations & Drafting	6
SURV201	Advanced Plane Surveying	6
SURV202	Photogrammetry	2
SURV203	Practical Astronomy	2
SURV204	Legal Surveying	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
MATH120	Applied Computer Programming	2
		30

SECOND YEAR	Semester IV	Hours per week
CIV202	Municipal Services	4
SURV200	Survey Computations & Drafting	6
SURV201	Advanced Plane Surveying	6
SURV202	Photogrammetry	2
SURV203	Practical Astronomy	2
SURV204	Legal Surveying	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
MATH120	Applied Computer Programming	2
		30

PROGRAM: Construction Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

CBC CODE: AR3
FEES: $260 per year

GENERAL INFORMATION:

With the guidance and advice of a committee representing the construction and allied industries, this program is designed to prepare young men to enter the construction industry in various capacities leading to positions as estimators, expediters, building inspectors, building products salesmen, field engineers and superintendents. These positions are not seasonal in nature.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials & Methods	12
DR120	Descriptive Geometry I	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communications	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	Hours per week
CO100	Building Construction	4
CO101	Quantity Surveying I	8
CO102	Mechanical Installations I	3
CO103	Construction Materials	3
MATH100	Mathematics	5
ENG100	Language & Communication	2
PHYS100	Applied Physics I	5
		30

SECOND YEAR	Semester III & Semester IV	Hours per week
CO104	Site Engineering	2
CO200	Building Construction	4
CO201	Quantity Surveying II	6
CO202	Mechanical Installations II	4
CO203	Contracts and Specifications	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
EC100	Economics	2
MECH110	Mechanics of Materials	2
		30

PROGRAM: Drafting Technician - Architectural
LOCATION: Casa Loma Campus
LENGTH: 2 years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR4
FEES: $260 per year

GENERAL INFORMATION:

This program is designed to provide technicians for architects' offices, construction companies, engineering firms, and government departments. The program of instruction is arranged to develop skills in architectural drawing, detailing, rendering, and model building; and to impart knowledge of architectural design, contracts, organization, and business relationships.

Graduates find employment as draftsmen, field representatives, building products salesmen, and expediters.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials and Methods	12
DR120	Descriptive Geometry I	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	
ARCH100	Materials and Methods	2
DR102	Architectural Drafting I	10
DR120	Descriptive Geometry I	2
MATH100	Mathematics	5
ENG100	Language & Communication	2
EC100	Economics	4
PHYS100	Applied Physics I	5
		30

SECOND YEAR	Semester III & Semester IV	
ARCH200	Materials and Methods	3
CO101	Quantity Surveying	2
DR111	Mechanical Installations Drafting	3
DR115	Structural Drafting	2
DR202	Architectural Drafting II	10
DR220	Descriptive Geometry II	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH100	Mechanics of Materials	2
		30

PROGRAM: Drafting Technician - General
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR5
FEES: $260 per year

GENERAL INFORMATION:

Versatility is the keynote of this program which trains for industry a draftsman who has a general knowledge of the architectural, survey and mechanical fields; with such a versatile background, he should be an asset to any drafting office.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week	FIRST YEAR	Semester II	
CIV100	Construction Materials and Method	12	DR102	Architectural Drafting I	9
DR120	Descriptive Geometry I	2	DR125	Machine Drafting I	8
SURV110	Surveying	4	DR108	Structural Drafting I	4
MATH100	Mathematics	5	DR120	Descriptive Geometry I	2
ENG100	Language & Communication	2	MATH100	Mathematics	5
MECH100	Mechanics	5	ENG100	Language & Communication	2
		30			30

SECOND YEAR	Semester III & Semester IV	
DR154	Art and Presentation	2
DR202	Architectural Drafting II	7
DR231	Machine Drafting II	6
MACH110	Workshop Technology	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH110	Mechanics of Materials	2
PHYS100	Applied Physics I	3
		30

PROGRAM: Drafting Technician - Mechanical Services
LOCATION: Casa Loma Campus
LENGTH: 2 years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR7
FEES: $260 per year

GENERAL INFORMATION:

This program is intended to prepare a technician for a position in an architect's or consultant's office as a draftsman or estimator in the mechanical installation department. The student will gain some knowledge of the design and a thorough knowledge of the graphical layout of all the mechanical services required in an architectural structure, plus a general knowledge of the architectural and strucutral components and methods of construction. A very broad and intensive study is made in the areas of air conditioning, refrigeration, warm air, water and steam heating systems, plumbing and drainage systems.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials and Methods	12
DR120	Descriptive Geometry I	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	Hours per week
DR106	Architectural Drafting I	4
DR107	Mechanical Installation Drafting I	8
DR109	Electrical Installation Drafting I	4
DR120	Descriptive Geometry I	2
MATH100	Mathematics	5
ENG100	Language & Communication	2
PHYS100	Applied Physics I	5
		30

SECOND YEAR	Semester III & Semester IV	Hours per week
DR228	Air Conditioning and Refrigeration	8
DR229	Heating Systems	4
DR230	Plumbing Systems	6
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH110	Mechanics of Materials	3
MECH115	Mechanics of Fluids	3
		30

PROGRAM: Drafting Technician - Structural
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR8
FEES: $260 per year

GENERAL INFORMATION:

For the young man gifted with a talent for technical work, the opportunity to play a part in the construction industry offers a most interesting vocation. To be one of the team which is building the modern scene is itself a satisfying experience. It is for the purpose of assisting the young man with ambition that this course is offered. Graduates of the course will find a waiting field in engineering offices, fabricating companies, municipal and governmental offices.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials & Methods	12
DR120	Descriptive Geometry I	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	Hours per week
CO200	Building Construction	4
DR120	Descriptive Geometry I	4
STR122	Structural Detailing	10
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH110	Mechanics of Materials	5
		30

SECOND YEAR	Semester III	
CO103	Construction Materials	3
CO204	Mechanical & Electrical Installations	3
STR212	Structural Steel - Problems & Drawing	8
STR213	Reinforced Concrete - Problems & Drawing	7
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH210	Mechanics of Materials	3
		30

SECOND YEAR	Semester IV	
CO103	Construction Materials	3
CO204	Mechanical & Electrical Installations	3
STR214	Project Drawing	15
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH210	Mechanics of Materials	3
		30

PROGRAM: Survey Technologist
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Grade 12 with above the average in mathematics and science

GBC CODE: AR6
FEES: $260 per year

GENERAL INFORMATION:

The survey technologist is equipped to operate at the senior party chief level. He could also fill the position of senior draftsman or office manager in a survey office. He is qualified to accept responsibility for a project from its inception to its conclusion and to consult with the professional engineer on the legal and technical aspects of the project.

In practising his career, the survey technologist is involved in operating survey equipment, carrying out field, topographical, and legal surveys; interpreting aerial photographs, preparing field notes, programming computers, searching property ownership, and preparing plans and documents.

PROGRAM CONTENTS:

FIRST YEAR	Module I	Hours per week	FIRST YEAR	Module II	Hours per week
CIV100	Construction Materials & Methods	12	DR121	Descriptive Geometry	2
DR120	Descriptive Geometry I	2	SURV100-T	Survey Computations & Drafting	5
SURV110	Surveying	4	SURV101-T	Plane Surveying	8
MATH100	Mathematics	5	MATH100-T	Mathematics	5
ENG100	Language & Communication	2	ENG100	Language & Communication	2
MECH100	Mechanics	5	EC100	Economics	4
		30	PHYS100-T	Applied Physics I	5
					31

PROGRAM: Survey Technologist (Continued)

FIRST YEAR	Module III	Hours per week	SECOND YEAR	Module IV	Hours per week
DR221	Descriptive Geometry	2	CIV202	Municipal Services	4
SURV200-T	Survey Computations & Drafting	7	SURV200-T	Survey Computations & Drafting	4
SURV201-T	Advanced Plane Surveying	10	SURV201-T	Advanced Plane Surveying	6
MATH200-T	Mathematics	5	SURV202	Photogrammetry	2
ENG200	Language & Communication	2	SURV203	Practical Astronomy	2
EL130	Electrical Fundamentals	4	SURV204	Legal Surveying	2
		30	MATH200-T	Mathematics	5
			ENG200	Language & Communication	2
			MATH120	Applied Computer Programming	4
					31

SECOND YEAR	Module V		SECOND YEAR	Module VI	
CIV202	Municipal Services	4	CIV302-T	Municipal Services	4
SURV203	Practical Astronomy	2	SURV300-T	Cartography	6
SURV204	Legal Surveying	2	SURV301-T	Advanced Plane Surveying	6
SURV300-T	Cartography	4	SURV302-T	Photogrammetry	3
SURV301-T	Advanced Plane Surveying	8	SURV303-T	Practical Astronomy	2
SURV302-T	Photogrammetry	3	SURV304-T	Legal Surveying	2
MATH300-T	Mathematics (Statistics)	5	MATH301-T	Mathematics (Matrices)	5
ENG332	Business Communication	2	ENG332	Business Communication	2
		30			30

PROGRAM: Concrete Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR9
FEES: $260 per year

GENERAL INFORMATION:

This program is designed to equip the graduate with the knowledge and techniques required for employment within the ever-expanding concrete industry.

The graduate will be able to operate at a significant and unique level in the labour force, between the engineer and the skilled craftsman; he will be familiar with the responsibilities and talents of both.

The curriculum has been designed to encompass a wide range of courses and will open up job opportunities in concrete construction, inspection, manufacturing, supply and sales.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
CIV100	Construction Materials & Methods	12
DR120	Descriptive Geometry	2
SURV110	Surveying	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	5
		30

FIRST YEAR	Semester II	Hours per week
CO101	Quantity Surveying I	4
CO105	Principles of Concrete	4
CO106	Concrete Construction Methods I	6
CO107	Blueprint Reading & Drafting	4
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH110	Mechanics of Materials	5
		30

PROGRAM: Concrete Technician (Continued)

SECOND YEAR	Semester III	Hours per week
CO203	Contracts & Specifications	4
CO207	Concrete Structural Design	4
CO206	Concrete Construction Methods II	4
CHEM215	Chemistry	4
PSY204	Industrial Psychology & Salesmanship	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
CO205	Principles of Concrete	4
		30

SECOND YEAR	Semester IV	Hours per week
CO203	Contracts & Specifications	4
CO207	Concrete Structural Design	4
CO206	Concrete Construction Methods II	4
EC214	Business Management & Labour Relations	4
CHEM215	Chemistry	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
CO205	Principles of Concrete	4
		30

PROGRAM: Civil Engineering Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: AR10
FEES: $260 per year

GENERAL INFORMATION:

This program provides basic theoretical and practical training for those who seek a career in the design, planning or construction of civil engineering projects such as highways, structures, site surveying, pollution control, and utilities.

On graduation, the student who elects to take this program could expect to find employment with consulting engineers, highway departments, construction firms, or planning departments.

He can be employed as design draftsman, engineering assistant, site surveyor, construction supervisor, or quality inspector.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week	FIRST YEAR	Semester II	Hours per week
CIV100	Construction Materials and Methods	12	CIV101	Engineering Drawing and Design	6
DR120	Descriptive Geometry I	2	CIV103	Construction Materials	3
SURV110	Surveying	4	DR121	Descriptive Geometry	2
MATH100	Mathematics	5	SURV101	Plane Surveying	8
ENG100	Language & Communication	2	MATH100	Mathematics	5
MECH100	Mechanics	5	ENG100	Language & Communication	2
		30	PHYS100	Applied Physics I	5
					31

SECOND YEAR	Semester III & Semester IV	
CIV200	Structural Drawing and Design	4
CIV202	Municipal Services	3
CIV203	Highway Technology	5
CIV204	Specifications & Estimating	2
SURV201	Advanced Plane Surveying	6
MATH120	Applied Computer Programming	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
MECH110	Mechanics of Materials	2
		30

PROGRAM: Drafting
LOCATION: Casa Loma Campus
LENGTH: 1 Year (40 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR40
OMRP CODE: 615
FEES: $5 per week

GENERAL INFORMATION:

Graduates of this course find employment in architectural and engineering offices, municipal and provincial offices and electrical or electronic offices. Students graduating from this program with honours standing will be considered for admission in the technician program.

PROGRAM CONTENTS:

	Semesters I & II
DR151	Architectural Drawing
DR150	Materials and Methods
DR152	Mechanical Drawing
DR158	Electrical Drawing
DR159	Mechanical Services Drawing
EL136	Electrical Lab
MATH130	Mathematics
ENG130	Language & Communications

PROGRAM: Drafting Refresher
LOCATION: Casa Loma Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR47
OMRP CODE: 732
FEES: $5 per week

GENERAL INFORMATION:

This program has been designed to familiarize students, who have already obtained their qualifications in countries outside Canada, with Canadian engineering practice, in mechanical, architectural, structural, electrical or electronic fields.

Satisfactory completion of the program will ensure ability to compete in the industrial market for positions of at least junior draftsman level.

PROGRAM CONTENTS:

DR139	Drafting
MATH133	Mathematics
ENG141	Language & Communication
Electives:	architectural, mechanical, structural, electrical or electronics drafting.

PROGRAM: Heating Technician
LOCATION: Casa Loma Campus
LENGTH: 1 Year (52 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR42
OMRP CODE: 651
FEES: $5 per week

GENERAL INFORMATION:

In the heating field, there is a considerable demand for technical personnel who are knowledgeable in oil, gas and electric heating and cooling systems; this demand has been created, in part, by the expansion of building construction.

PROGRAM CONTENTS:

Semester I

HT100	Domestic oil burners
HT101	Oil Burners
HT110	Heating
PHYS (Level III)	Electrical Module
MATH133	Mathematics
ENG141	Language & Communications
DR131	Blueprint Reading

Semester II

HT110	Heating
HT111	Heating
HT140	Gas Burners
MATH130	Mathematics
PHYS131	Physics
DR131	Blueprint Reading
ENG130	Language & Communication

Semester III

HT112	Heating
HT113	Heating
MATH130	Mathematics
PHYS131	Physics
ENG130	Language & Communications

PROGRAM: Oil Burner Servicing
LOCATION: Casa Loma Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR41
OMRP CODE: 634
FEES: $5 per week

GENERAL INFORMATION:

During the past years, hundreds of thousands of automatic heating systems have been installed in Canada; this expansion has brought with it demands for qualified personnel to install and maintain this equipment.

PROGRAM CONTENTS:

HT130	Domestic Oil Burners
HT131	Oil Burners
HT132	Heating
HT140	Gas Burners
DR131	Drafting and Blueprint Reading
MATH133	Mathematics
ENG141	Language and Communication
PHYS133	Applied Physics

PROGRAM: Appliance Servicing
LOCATION: Casa Loma Campus
LENGTH: 1 Year (40 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR45
OMRP CODE: 601
FEES: $5 per week

GENERAL INFORMATION:

This program is designed to give a thorough knowledge of the theory and practice required for the maintenance and repair of home appliances. The student should have a high mechanical aptitude. Students are prepared for such occupations as servicemen, factory representatives, field representatives, appliance salesmen, appliance inspectors and production supervisors. Courses in laundry equipment, refrigeration, and electrical appliances are presented in blocks of thirteen weeks.

PROGRAM CONTENTS:

	Semesters I & II
AP130	Laundry Equipment
AP132	Refrigeration
AP133	Electrical Appliances
DR155	Drafting and Blueprint Reading
MATH134	Mathematics
ENG130	Language and Communication
AP134	Applied Physics
SBM132	Small Business Management

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Refrigeration and Air Conditioning
LOCATION: Casa Loma Campus
LENGTH: 2 Semesters (34 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR44
OMRP CODE: 641
FEES: $5 per week

GENERAL INFORMATION:

This program is designed to prepare young men to enter an apprenticeship program leading to certification (compulsory in Ontario) as a journeyman refrigeration mechanic. This is an excellent opportunity for any young man who left school before completing grade 12 to enter a challenging trade that pays well and assures full-time employment. Under an agreement with Industrial Training branch of the Ministry of Colleges and Universities, graduates of this program are granted equivalent time off the apprenticeship period and are excused the in-school requirements of the basic period of the apprenticeship program.

PROGRAM CONTENTS:

Semesters I & II	
DR136	Drafting
REF133	Electrical
REF130	Refrigeration Theory
REF131	Refrigeration Practice
WELD140	Oxy-acetylene Welding, Brazing and Cutting
MATH134	Mathematics
ENG130	Language and Communication

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Stationary Engineering
LOCATION: Casa Loma Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8-9

GBC CODE: AR48
OMRP CODE: 9533-122
FEES: $5 per week

GENERAL INFORMATION:

This program will provide instruction in all modules required for accreditation toward the 4th class and 3rd class stationary engineering certificate levels. Because of the modularization of this training, further details are available upon request.

PROGRAM CONTENTS:

STATIONARY ENGINEERING - 4TH CLASS

1st Semester — 20 Weeks

Course:	Modular Area:	Periods per modular area:
1	Steam Boilers	66
2	Steam Equipment	65
3	Heating & Refrigeration	70
4	Inst. & controls & Electrical	40
5	General Theory	50
6	Internal Combustion Engines	55
7	Math	20
8	Phys. & Chemistry	50
9	Language & Communication	15
10	Practical Shopwork	169
		= 600

STATIONARY ENGINEERING - 3RD CLASS

2nd Semester — 20 Weeks

Course:	Modular Area:	Periods per modular area:
1	Steam Boilers	75
2	Steam Equip.	85
3	Heating & Refrig.	100
4	Inst. & Controls	30
5	Electrical & Electronics	60
6	Internal Comb. Engines	95
7	B.P.R. & Strength of Materials	40
8	Math	40
9	Phys & Chemistry	55
10	Language & Communication	20
	TOTAL	600

PROGRAM: Dry Wall Taper
LOCATION: Casa Loma Campus
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent

GBC CODE: AR82
OMRP CODE: 668
FEES: $5 per week

GENERAL INFORMATION:

The emphasis in this program is directed toward the basic hand skill, mechanical procedures, and trade techniques necessary for the development of competent mechanics within the taping field. The program is structured to prepare graduates to become employable with the drywall industry and to meet the ever-growing demands of this industry for skilled drywall tapers.

PROGRAM CONTENTS:

TA130	Taping/Drywall
MATH10	Mathematics
ENG10	English
DR10	Drafting and Blueprint Reading

PROGRAM: Blueprint Reading
LOCATION: Casa Loma Campus
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: AR83
OMRP CODE: 656
FEES: $5 per week

GENERAL INFORMATION:

Advancement in many companies depends on ability to read blueprints; this program should enable a person to improve his position in the area of his specialization.

PROGRAM CONTENTS:

DR138	Blueprint Reading
ENG16	English
MATH16	Mathematics

PROGRAM: Painting and Decorating
LOCATION: Casa Loma Campus
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent

GBC CODE: AR46
OMRP CODE: 686
FEES: $5 per week

GENERAL INFORMATION:

This eight-week program has a major portion of its content directed towards paper-hanging. It will cover all the grades, qualities and styles of wallpaper.

PROGRAM CONTENTS:

PAINT130	Painting
MATH16	Mathematics
ENG16	English

PROGRAM: Residential Metal Siding Installation
LOCATION: Casa Loma Campus
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Successful completion of pre-requisite screening program

GBC CODE: AR90
OMRP CODE: 8799-206
FEES: $5 per week

GENERAL INFORMATION:

Installing metal siding, soffit, fascia and rainwater goods are the opportunities that await the successful graduates of this program.

The structure of the program is such that the student will receive training in a broad range of minor skills involving metal handling and construction practices common to the current residential construction industry. The assembly of these skills in the latter stages of the courses will create a much sought after specialist, who with personal motivation, can secure a financially rewarding future.

PROGRAM CONTENTS:

SID130	Siding Installation
MATH16	Mathematics
ENG16	English

PROGRAM: General Carpentry
LOCATION: Casa Loma Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent

GBC CODE: AR91
OMRP CODE: 8781-110-3
FEES: $5 per week

GENERAL INFORMATION:

This course is offered to students who are desirous of learning the skills which would fit them for the Carpentry industry. The course covers hand and power tools, general wood-working, acoustics, metal work, welding. If the student wishes to continue into the Apprenticeship Program, his in-school training reveals full credit within the Apprenticeship Regulations.

PROGRAM CONTENTS:

CAR130	Carpentry
ENG130	English
MATH130	Mathematics
DR141	Drafting

PROGRAM: Business Administration
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITES: Grade 12

GBC CODE: B1, B2, B3, B4
FEE: $260.00 per year

GENERAL INFORMATION:

These programs are designed for the student who seeks a broad, integrated education in the field of business, as well as the opportunity to specialize in selected subject areas. They are of two years duration, with starting dates in September and February.

In the second, third, and fourth semesters, considerable scope will be provided in the selection of optional subjects to broaden the student's knowledge in business or other subject areas.

PROGRAM CONTENTS:

Programs of Study - Common First Semester

FIRST YEAR	Semester I	Hours per week
ENG 100	Language & Communication	5
MATH 114	Business Mathematics	5
BUS 100	Business Organization	5
ACC 100	Introduction to Accounting	5
EDP 100	Introduction to Data Processing	5
MARK 100	Introduction to Marketing	5
		30

PROGRAM: Accounting
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: B1
FEE: $260.00 per year

GENERAL INFORMATION:

The courses included in this program provide a valuable preparation for students interested in accounting occupations in business and industry. They also offer preparatory training for students interested in working towards membership in one of the professional accounting societies. Subject credits are granted by the societies in specified courses where content and standards are considered equivalent.

PROGRAM CONTENTS:

FIRST YEAR — Semester I

See Business Administration

		Semester II	Hours per week
ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
ACC	101	Accounting	10
		Option	5
			30

SECOND YEAR — Semester III

ENG	201	English & The Business World	5
LAW	200	Business Law	5
ACC	200	General Accounting 1	5
ACC	201	Accounting Systems	5
ACC	202	Cost Accounting 1	5
		Option	5
			30

SECOND YEAR — Semester IV

BUS	215	Media Applications	5
ACC	203	General Accounting 11	10
ACC	204	Cost Accounting 11	5
ACC	205	Auditing and Taxation	5
		Option	5
			30

PROGRAM: Electronic Data Processing
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: B2
FEE: $260.00 per year

GENERAL INFORMATION:

The graduate of this program will be thoroughly trained in both the theoretical and practical applications of computers. The course will be of particular interest to the student who is initially interested in a career as a computer programmer, and who wishes to advance to the level of a systems analyst.

Applicants may be required to take an aptitude test before being admitted to the program.

PROGRAM CONTENTS:

FIRST YEAR — Semester I

See Business Administration

		Semester II	Hours per week
ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
EDP	101	Introduction to COBOL	5
EDP	102	Introduction to FORTRAN	5
		Option	5
			30

SECOND YEAR — Semester III

ENG	201	English & The Business World	5
MATH	215	Statistics 1	5
EDP	200	Advanced COBOL	5
EDP	201	Introduction to IBM/370	5
ACC	103	Accounting in an E.D.P. Environment	5
		Option	5
			30

Semester IV

BUS	215	Media Applications	5
EDP	202	IBM/370 Assembler Language	5
EDP	203	Systems Analysis	5
EDP	204	Advanced Programming	5
		Option	10
			30

PROGRAM: Marketing
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: B3
FEE: $260.00 per year

GENERAL INFORMATION:

The graduate of the two-year program is prepared for employment in any of the marketing functions, such as advertising, sales, planning, market research, wholesaling and retailing.

The program provides through lecture, field work and case study a broad comprehension of the marketing process so that the student may enter the above fields in any organization or may establish his own business.

PROGRAM CONTENTS:

FIRST YEAR — Semester I

See Business Administration

	Semester II	Hours per week
ENG 100	Language & Communication	5
MATH 114	Business Mathematics	5
BUS 101	Human Relations	5
MARK 102	Distribution Channels	5
MARK 101	Marketing Research & Information Systems	5
	Option	5
		30

SECOND YEAR — Semester III

ENG 201	English & The Business World	5
MATH 215	Statistics 1	5
MARK 200	Product Planning & Pricing Policy	5
MARK 201	The Sales Aspect of Marketing	5
MARK 202	Advertising & Sales Promotion	5
	Option	5
		30

Semester IV

BUS 215	Media Applications	5
MARK 205	Marketing Management 1	5
MARK 206	Marketing Management 11	5
MARK 207	Marketing Management 111	5
	Option	10
		30

PROGRAM: Business Administration - General
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: B4
FEE: $260.00 per year

GENERAL INFORMATION:

The objective of this program is to provide students with a highly flexible business program; to enable students to select option combinations that will prepare them for positions in office supervision, personnel, purchasing, and production control; or to make possible any combinations of B1, B2, and B3, which may be of particular interest to them, e.g., marketing and data processing for market research.

PROGRAM CONTENTS:

FIRST YEAR — Semester I

See Business Administration

	Semester II	Hours per week
ENG 100	Language & Communication	5
MATH 114	Business Mathematics	5
BUS 101	Human Relations	5
	Three Options or Majors of B1 or B2 or B3 at 101 or 102 level	15
		30

SECOND YEAR — Semester III

ENG 201	English & The Business World	5
MATH 215	Statistics 1	5
PSY 160	Psychology 1	5
	Three Options or Majors of B1 or B2 or B3 at level 101 102 200 201	15
		30

Semester IV

BUS 215	Media Applications	5
	Five Options or Majors of B1 B2 or B3 levels at 101 102 200 201 202 203 204 205	25
		30

PROGRAM: Secretarial Science (General) GBC CODE: B5
LOCATION: Teraulay Campus FEE: $260.00 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent; no previous knowledge of shorthand or typewriting is required. Holders of a Seconday School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can transcribe Pitman or machine shorthand at 80 wpm may enter the third semester of this program. Direct entry applicants must be prepared to take a test to substantiate the necessary skill speeds, prior to registration.

GENERAL INFORMATION:

The graduates of the two-year general secretarial program will have developed the skills essential to shorthand and typewriting; they will also have covered the related secretarial duty areas in sufficient depth to meet the decision-making ability of a competent secretary in business.

Credit will be given to students with typing and shorthand skills, thus enabling them to shorten or enrich (through options) their programs.

PROGRAM CONTENTS:

FIRST YEAR		Semester I	Hours per week
ENG	100	Lang.& Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

FIRST YEAR		Semester II	Hours per week
ENG	104	Business Communications	5
OP	101	Typewriting and Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III	
ENG	201	English & The Business World	5
BUS	100	Business Organization	3
ACC	105	Secretarial Accounting	2
SH	200	Shorthand	10
OP	200	Secretarial Procedures	10
			30

SECOND YEAR		Semester IV	
ENG	204	Business Communications	5
LAW	105	Business Law	3
SH	201	Applied Stenography	10
OP	201	Secretarial Practice	10
DIC	105	Dictaphone	2
			30

PROGRAM: Secretarial Science (Legal) GBC CODE: B6
LOCATION: Teraulay Campus FEE: $260.00 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent; no previous knowledge of shorthand or typewriting is required. Holders of a Secondary School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can transcribe Pitman or machine shorthand at 80 wpm may enter the third semester of this program. Direct entry applicants must be prepared to take a test to substantiate the necessary skill speeds, prior to registration.

GENERAL INFORMATION:

This program provides the skills and knowledge required for successful entry into legal secretarial positions.

PROGRAM CONTENTS:

FIRST YEAR		Semester I	Hours per week
ENG	100	Language & Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

FIRST YEAR		Semester II	Hours per week
ENG	104	Business Communications	5
OP	101	Typewriting & Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III	
ENG	201	English & The Business World	5
LAW	202	Business Law	5
OP	202	Legal Office Practice	5
SH	202	Legal Shorthand	10
		Option	5
			30

SECOND YEAR		Semester IV	
ENG	204	Business Communications	5
LAW	203	Business Law	5
OP	203	Legal Office Practice	5
SH	203	Legal Shorthand	7
ACC	106	Legal Accounting	3
		Option	5
			30

PROGRAM: Secretarial Science (Medical) GBC CODE: B7
LOCATION: Teraulay Campus FEE: $260.00 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent; no previous knowledge of shorthand or typewriting is required. Holders of a Secondary School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can transcribe Pitman or machine shorthand at 80 wpm may enter the third semester of the medical shorthand program. Entry is gained to the medical dicta program only in semester III, by holding a grate 12 certificate and possessing the ability to type at a minimum of 45 wpm. Direct entry applicants must be prepared to take a test to substantiate the necessary skill, prior to registration.

GENERAL INFORMATION:

This program is designed to train medical stenographers and medical dictatypists for positions in their respective fields.

PROGRAM CONTENTS:

FIRST YEAR		Semester I	Hours per week
ENG	100	Language & Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

Semester II

ENG	104	Business Communications	5
OP	101	Typewriting and Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III (Medical Shorthand Program)	
ENG	201	English & the Business World	5
OP	204	Medical Office Practice	5
SH	204	Medical Shorthand	10
ANAT	100	Anatomy and Physiology	5
		Option	5
			30

PROGRAM: Secretarial Science (Medical) Cont'd. GBC CODE: B7

SECOND YEAR		Semester IV	Hours per week
ENG	204	Business Communications	5
OP	205	Medical Office Practice	5
SH	205	Medical Shorthand	7
ANAT	100	Anatomy and Physiology	5
ACC	107	Medical Accounting	3
		Option	5
			30

OR

SECOND YEAR		Semester III (Medical Dictaphone Program)	
ENG	201	English & the Business World	5
OP	204	Medical Office Practice	5
DIC	200	Medical Dictaphone	8
ANAT	100	Anatomy and Physiology	5
ANAT	101	Medical Terminology	2
		Option	5
			30

Semester IV

ENG	204	Business Communications	5
OP	205	Medical Office Practice	5
DIC	201	Medical Dictaphone	5
ANAT	100	Anatomy and Physiology	5
ANAT	101	Medical Terminology	2
ACC	107	Medical Accounting	3
		Option	5
			30

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Physical Distribution
LOCATION: Teraulay
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent

GBC CODE: B8
FEES: $260 per year

GENERAL INFORMATION

The graduate in physical distribution has a thorough and specialized working knowledge of the processes of moving goods from the producer to the consumer, as it applies to local, national or international operations.

Numerous challenging opportunities exist in business, industry, and government in the fields of traffic management, inventory control, warehousing, and import/export.

FIRST YEAR	Semester I	Hours per week
ENG100	Language & Communication	5
MATH114	Mathematics	5
MARK100	Marketing	5
EDP100	Electronic Data Processing	5
BUS100	Business Organization	5
ACC100	Accounting	5

FIRST YEAR	Semester II	Hours per week
BUS210	Physical Distribution Systems	5
BUS117	Warehousing	5
BUS118	Purchasing	5
BUS119	Contemporary Business Issues	5
BUS101	Human Relations	5
ENG100	Language & Communication	5

SECOND YEAR	Semester III	
BUS121	Physical Distribution I	5
BUS105	Inventory Control I	5
BUS120	Traffic I	5
ENG201	English in the Business World	5
MATH215	Statistics I	5
	One Option	5

SECOND YEAR	Semester IV	
BUS221	Physical Distribution II	10
BUS205	Inventory Control II	3
BUS220	Traffic II	3
BUS215	Media Applications	4
	Two Options	10

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Court Reporting
LOCATION: Teraulay Campus
LENGTH: 1 Year
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent and the successful completion of a recognized legal secretarial science program or related business experience: plus a shorthand speed of 130 wpm on straight matter for five minutes and 60 wpm in typing. Applicants must be prepared to take a test to substantiate the necessary skill speeds prior to registration.

GBC CODE: B41
FEES: $260 per year

COURSE CONTENT: An intensive course in reporting skills which will prepare the student for employment in the court reporting field and enable him to write the Chartered Shorthand Reporters' Association examinations.

PROGRAM CONTENTS:

	Semester I	Hours per week
ENG301	English and the Legal World	3
BUS307	Legal, Medical, and General Terminology	5
BUS308	Court Procedures	5
BUS309	Current Events	2
SH302	Shorthand & Transcription (Pitman or Machine)	15

	Semester II	
ENG304	English and the Legal World	3
BUS312	Legal, Medical, and General Terminology	5
BUS311	Field work in the courts	5
BUS310	Current Events	2
SH303	Shorthand & Transcription (Pitman or Machine)	15

PROGRAM: Sales
LOCATION: Teraulay Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12

GBC CODE: B42
FEE: $260.00 per year

GENERAL INFORMATION:

The graduate will be prepared for employment in all areas of commerce directly related to sales. Special studies include a course in salesmanship designed to develop the student's sales skills with strong emphasis on field conditions. Complementary academic subjects are included to provide an understanding of other related business areas which will increase his effectiveness in sales and prepare the student for further advancement. The program can be timetabled as a regular day program consisting of two consecutive semesters or arranged so that the student attends one semester at the College, works for a semester and returns to the Collge for a final semester.

PROGRAM CONTENTS:

SEMESTER I

			Hours per week
ENG	100	Language & Communication	5
BUS	100	Business Organization	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
MARK	100	Introduction to Marketing	5
ACC	100	Introduction to Accounting	5
			30

SEMESTER II

ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
BUS	200	Business Law	5
MARK	202	Advertising and Sales Promotion	5
MARK	201	The Sales Aspect of Marketing	5
		Option	5
			30

PROGRAM: Commercial Stenographic
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: B45
OMRP CODE: 419
FEE: $5.00 per week

GENERAL INFORMATION:

This program offers students an opportunity to acquire skills in shorthand, typewriting and office practice, and a knowledge of business English, which will equip them to fill stenographic and secretarial positions in the world of business, government and finance. This objective is reached by students obtaining 50-55 wpm in typing, 80-120 wpm in shorthand and the grade XII equivalent in English and office practice.

PROGRAM CONTENTS:

SEMESTER I			SEMESTER II		
TYP	149	Typewriting	OP	150	Office Practice
ENG	149	Business English	SH	149	Shorthand
SH	149	Shorthand	ENG	149	Business English
OP	150	Office Practice			

PROGRAM: Business Machines & Bookkeeping
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: B51
OMRP CODE: 413
FEE: $5.00 per week

GENERAL INFORMATION:

This program is designed to enable graduates to adequately fill the position of a general office worker in industry, with a minimum of on-the-job training. The main accent is placed on bookkeeping. Practical work is given on a wide range of the newest and most modern equipment now available for office use, such as electronic bookkeeping machines, calculators, keypunch machines, as well as data processing equipment. However, office methods and procedures are also thoroughly taught.

PROGRAM CONTENTS:

SEMESTER I			SEMESTER II		
BOK	148	Bookeeping & Business Machines	TYP	148	Typewriting
MATH	148	Business Mathematics	BM	148	Business Machines
LAW	148	Law and Economics	ENG	149	Business English
ENG	149	Business English	OP	148	Office Practice & Duplicating
			EDP	148	Data Processing

PROGRAM: Commercial Clerical
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent

GBC CODE: B52
OMRP CODE: 417
FEE: $5.00 per week

GENERAL INFORMATION:

This program exists to train the student in the performance of a variety of general office functions. The graduate is prepared to assume a position as a clerk typist or a general clerical worker. The inclusion of bookkeeping and business machines will also develop the necessary skills for work in a variety of bookkeeping jobs.

PROGRAM CONTENTS:

SEMESTER I			SEMESTER II		
TYP	152	Typewriting	TYP	152	Typewriting
MATH	152	Business Mathematics	OP	152	Office Practice
ENG	146	Language & Communication	MATH	152	Business Mathematics
BOK	152	Bookkeeping	ENG	146	Language & Communication
BM	152	Business Machines	BOK	152	Bookkeeping
			BM	152	Business Machines

PROGRAM: Clerk Typist
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 24 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: B53
OMRP CODE: 415
FEE: $5.00 per week

GENERAL INFORMATION:

The purpose of this program is to train the student, by a relatively short and intensive course, to a skill level which will enable him to gain employment as a clerk typist. Preference will be given to women over 30 years of age.

PROGRAM CONTENTS:

TYP	152	Typewriting
OP	114	Office Practice
ENG	146	Language & Communication
MATH	156	Business Mathematics

PROGRAM: Commercial Accountancy
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: B54
OMRP CODE: 416
FEE: $5.00 per week

GENERAL INFORMATION:

This program will give the student a thorough grounding in the principles and practices of modern day accounting. The graduate will be equipped to assume employment in any of a number of accounting-oriented positions. This program can also lead to opportunities for further training in the field through the various accounting associations.

PROGRAM CONTENTS: Semesters I & II

MATH	148	Business Mathematics
ENG	148	Language & Communication
ACC	154	Accounting
BM	152	Business Machines

R.I.A. OPTION

Students enrolled in the commercial accountancy program may transfer to a special R.I.A. program after an initial 8 week period. Such transfers will be completely dependent upon the recommendation of the instructors and the availability of a seat in the class.

A minimum period of 20 weeks is required to complete the program. Subjects covered include accounting, business mathematics, economics, report writing.

Graduates of this option will be permitted to write final first-year R.I.A. examinations in these subjects, upon successful completion of the program and recommendation of the Business and Commerce Department.

PROGRAM: Inventory Control - Warehouseman
LOCATION: Teraulay Campus
LENGTH 24 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: B55
OMRP CODE: 426
FEE: $5.00 per week

GENERAL INFORMATION:

This program prepares students for entry into the following fields of employment, as related to stores and warehousing in industry.

Setting up inventory control kardex systems, ordering of raw materials and finished assemblies, balancing inventories, shipping and receiving and warehousing.

PROGRAM CONTENTS:

INV	155	Inventory Control and Warehousing
TYP	155	Typewriting
BM	152	Business Machines
BOK	152	Bookkeeping

PROGRAM: Commercial Refresher — GBC CODE: B56
LOCATION: Teraulay Campus - Keele Campus — OMRP CODE: 442
LENGTH: 16 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Previous commercial training, on-the-job experience, and previous typing skill.

GENERAL INFORMATION:

This program is designed for the student with a good background in commercial training and on-the-job experience, but who has not used this training for some years. Its purpose is to redevelop skills and knowledge to an employable level.

PROGRAM CONTENTS:

MATH 156 Business Mathematics or BOK 152 Bookeeping
ENG 156 Language & Communication
TYP 156 Refresher Typewriting
OP 114 Office Practice

PROGRAM: Typist - General Office — GBC CODE: B57
LOCATION: Teraulay Campus — OMRP CODE: 450
LENGTH: 20 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Previous clerical experience and a fluency in English, both oral and written.

GENERAL INFORMATION:

The aim of this concentrated program is to train selected students for employment as clerk typists by further developing their clerical skills, and developing a typing skill of 45 to 50 wpm.

PROGRAM CONTENTS:

TYP 157 Typewriting and Office Practice
MATH 156 Business Mathematics
ENG 156 Language & Communication
BM 137 Business Machines

PROGRAM: Commercial Dicta-Typist — GBC CODE: B58
LOCATION: Teraulay Campus — OMRP CODE: 418
LENGTH: 40 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade X or equivalent

GENERAL INFORMATION:

This program offers students an opportunity to acquire skills in dicta-machines, typewriting, and office practice, and a knowledge of business English which will equip them to fill dicta-typists positions in the world of business, government, and the medical and legal professions. This objective is attained by students achieving 50 wpm typing, versatility and knowledge of dictaphones and the Grade XII equivalent in English and office practice.

PROGRAM CONTENTS:

Semesters I & II

TYP 149 Typewriting
ENG 149 Language & Communication
OP 114 Office Practice
DIC 105 Dictaphone

PROGRAM: Electronic Data Processing I (Keypunch & Verifier) — GBC CODE: B70
LOCATION: Teraulay Campus — OMRP CODE: 618
LENGTH: 8 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent, aptitude test, typing speed of 40 wpm.

GENERAL INFORMATION:

The purpose of this program is to train keypunch operators to a level of proficiency that they can graduate directly into positions in the field. Objective is better than 10,000 strokes per hour.

PROGRAM CONTENTS:

EDP 170 Keypunch

PROGRAM: Business Machines
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 and typing 35 wpm.

GBC CODE: B73
OMRP CODE: 412
FEE: $5.00 per week

GENERAL INFORMATION:

The student will be introduced to electronic printing and rotary calculators. When proficiency on these machines is reached, students will be given training on bookkeeping machines.

Graduates will acquire a knowledge of calculating machines sufficient to enable them to solve mathematical business problems, and to adapt quickly to any new equipment encountered in a business office. Those whose prerequisite qualifications include courses in bookkeeping will acquire a knowledge of performing the complete bookkeeping cycle on the bookkeeping machines and will become accredited machine bookkeepers. Those whose prerequisite qualifications do not include courses in bookkeeping will acquire a knowledge of posting accounts receivable, accounts payable and payroll on the bookkeeping machine and will become accredited posting machine operators.

PROGRAM CONTENTS:

Instruction on: 10-key adders, rotary calculators, printing calculators, electronic calculators, editing, posting and bookkeeping machines.

PROGRAM: Typing Refresher
LOCATION: Teraulay Campus - Keele Campus
LENGTH: 12 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Previous work experience in typing. Present typing skill, 15-20 wpm minimum.

GBC CODE: B74
OMRP CODE: 443
FEE: $5.00 per week

GENERAL INFORMATION:

To enable former office workers or previously trained typists to regain earlier skills to prepare for commercial employment.

PROGRAM CONTENTS:

TYP	158	Typing
ENG	156	Language & Communication
OP	158	Office Practice
BM	158	Business Machines

PROGRAM: Stenographic Refresher
LOCATION: Teraulay Campus
LENGTH: 12 Weeks Max.
CERTIFICATION: Certificate
PREREQUISITE: Grade XII English
Prior shorthand & typing skills in the stenographic field.

GBC CODE: B75
OMRP CODE: 4111
FEE: $5.00 per week

GENERAL INFORMATION:

To enable former stenographic typists to regain earlier skills in order to prepare for commercial employment.

PROGRAM CONTENTS:

Typing and shorthand are the only two courses involved. The division of the six hours per day between the two courses will be made according to the individual student's ability.

PROGRAM: Design Technician - Electrical
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EL1
FEES: $260 per year

GENERAL INFORMATION:

This program offers the drafting skills, combined with an adequate theoretical base, practical knowledge, and workshop competence to provide a background for the electrical design technician. Electrical design technicians are employed by local, provincial and federal government departments; municipal, and provincial hydro-electric systems, manufacturing companies, consulting engineering firms, and construction companies.

PROGRAM CONTENTS:

	*Semester I (15 week module)	Hours per week
EL106	Electrical Fundamental I	10
EL107	Electrical Fundamentals II	
ELTC107	Electronic Fundamentals	5
ELTC109	Introduction to Electronic & Acoustic Systems	
INST108	Instrumentation Fundamentals	6
E1131	Circuit Analysis	6
EL120	Drafting Fundamentals	3
ENG100	Language & Communication	2
		32

	Semester II (15 week module)	
EL108	Electrical Machines	16
EL109	Electrical Circuits	
MATH100	Mathematics	4
ENG100	Language & Communication	2
MECH100	Mechanics	4
DR100	Drafting Fundamentals	4
		30

	Semester IIA (6 week module)	
EL111	Electrical Control Systems	16
MATH100	Mathematics	4
ENG100	Language & Communication	2
MECH100	Mechanics	4
DR122	Electrical Drafting Fundamentals	4
		30

PROGRAM: Design Technician - Electrical (Continued)

	Semester III (15 week module)	Hours per week
EL208	Electrical Distribution Systems	16
EL209	Industrial Electronic Fundamentals	
EL211	Protection of Electrical Equipment	
MATH200	Mathematics	4
ENG200	Language & Communication	2
**EC100	Economics	4
DR203	Electrical Drafting	4
		30

	Semester IV (15 week module)	
EL227	Electrical Design Applications	16
DR112	Architectural and Mechanical Blue Print Reading and Drafting	
EL138	Materials and Regulations	
EL202	Electrical Laboratory and Installation	4
ENG200	Language & Communication	2
MATH200	Mathematics	2
PHYS100	Applied Physics	4
		32

	Semester IVA (6 week module)	
EL227	Electrical Design Applications	24
EL214	Electrical Specification Writing	
EL120	Materials and Methods	
EL138	Materials and Regulations	
DR112	Architectural and Mechanical Blue Print Reading and Drafting	4
EL202	Electrical Laboratory and Installation	2
		30

* Semester I - Common to:

Design Technician Electrical
Electrical Technician
Electronic Technician
Sound Analysis and Acoustic Technician

**Liberal Studies Electives - e.g.:

EC100	Economics
EC102	Engineering Law and Administration
PSY204	Industrial Psychology and Salesmanship
BUS100	Business Organization
BUS201	Business Organization and Financing

PROGRAM: Electrical Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EL2
FEES: $260 per year

GENERAL INFORMATION:

This program is designed to provide the theory, skills and knowledge of industrial practices required of an electrical technician. The course has been designed about a common first year, and a second year which allows the student to specialize in an area of greatest interest to him. The areas of specialization are electrical apparatus, industrial electronics systems, and electrical drafting. Opportunities for employment are found in the fields of electrical generation and distribution, communications, manufacturing, and building. Graduates are employed as draftsmen, servicemen, operators, and inspectors.

PROGRAM CONTENT:

	*Semester I (15 Week Module)	Hours per week
EL106	Electrical Fundamentals I	10
EL107	Electrical Fundamentals II	
ELTC107	Electronic Fundamentals	5
ELTC109	Introduction to Electronic and Acoustic Systems	
INST108	Instrumentation Fundamentals	6
EL131	Circuit Analysis	6
EL120	Drafting Fundamentals	3
ENG100	Language & Communication	2
		32

	Semester II (15 Week Module)	
EL108	Electrical Machines	16
EL109	Electrical Circuits	
EL231	Mathematics	4
ENG100	Language & Communication	2
EL240	Mechanics	4
EL220	Drafting Fundamentals	4
		30

	Semester IIA (6 Week Module)	
EL111	Electrical Control Systems	16
EL231	Mathematics	4
ENG100	Language & Communication	2
EL240	Mechanics	4
EL221	Electrical Drafting Fundamentals	4
		30

PROGRAM: Electrical Technician (Continued 1)

	Semester III (15 Week Module)	Hours per week
EL208	Electrical Distribution Systems	16
EL209	Industrial Electronic Fundamentals	
EL211	Protection of Electrical Equipment	
MATH200	Mathematics	4
ENG200	Language & Communication	2
**EC100	Economics	4
DR203	Electrical Drafting	4
		30

	Semester IV (15 Week Module)	
****EL	Electrical Elective	16
MATH200	Mathematics	2
ENG200	Language & Communication	2
PHYS100	Applied Physics	4
EL138	Materials & Regulations	2
***MECH	Mechanical Elective	4
		30

	Semester IVA (6 Week Module)	
****EL	Electrical Elective	16
EL138	Materials and Regulations	2
EL202	Electrical Laboratory and Installation	6
INST105	Applied Nuclear Theory	6
		30

*Semester I - Common to:

Design Technician Electrical
Electrical Technician
Electronic Technician
Sound Analysis and Acoustic Technician,
Instrumentation Technician

**Liberal Studies Electives - e.g.

EC100	Economics
EL102	Engineering Law and Administration
PSY204	Industrial Psychology and Salesmanship
BUS100	Business Organization
BUS201	Business Organization and Financing

PROGRAM: Electrical Technician (Continued 2)

***Mechanical Electives - e.g.

INST203	Computer Control Principle I
WELD146	Welding
MACH208	Numerical Control
INST106	Industrial Process Instrumentation

****Electrical Electives - e.g.

EL212	Industrial Electronic Control Systems (including Laboratory)
EL213	Electrical Apparatus (including Laboratory)

PROGRAM: Electronic Technician
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

CBC CODE: EL3
FEES: $260 per year

GENERAL INFORMATION:

This program is designed to provide engineering technicians to work in the maintenance, installation, production, design or research phases of the electronics industry. In order to better qualify the student of this program for immediate productive work in industry upon graduation, the program has been built about a common first year, and a second year which allows the student to specialize in an area of greatest interest to him. The areas of specialization are communications, computers, and ETV/TV broadcast. Graduates of this program are now employed in research and engineering departments of government and industry, in utility companies, in radio and television broadcasting, in closed circuit television studios, in the oil business and in computer and communications systems installation.

PROGRAM CONTENT:

	Semester I (15 weeks)	Hours per week
EL106	Electrical Fundamentals I	8
EL107	Electrical Fundamentals II	4
ELTC107	Electronic Fundamentals I	4
INST108	Instrumentation Fundamentals	6
EL120	Drafting Fundamentals	3
ENG100	Language & Communication	2
ELTC111	Applied Circuit Analysis Part I	4
		31

	Semester II (19 weeks)	
ELTC105	TV Circuitry	3
ELTC108	Electronic Fundamentals II	5
ELTC101	Amplifiers	6
ELTC102	AM/FM Receiver Principles	6
ELTC111	Applied Circuit Analysis Part I	4
ELTC220	Drafting Fundamentals	3
ENG100	Language & Communication	2
		29

	Semester III (17 weeks)	
ELTC200	Transistors	4
ELTC201	Pulse Circuits	4
ELTC213	Laboratory	9
ELTC202	Computer Principles	3
MATH200	Mathematics	3
ENG200	Language & Communication	2
ELTC221	Audio, Video Principles	6
		31

PROGRAM: Electronic Technician (Continued 1)

Areas of Specialization - Communications

	Semester IV (17 weeks)	Hours per week
ELTC203	Communications Principles	3
ELTC210	Computer Programming	1
ELTC213	Laboratory	9
ELTC212	Communications Systems	7
MATH200	Mathematics	3
ENG200	Language & Communication	2
EC100	Economics	3
MECH102	Machines and Dynamics	3
		31

Area of Specialization - ETV/TV Broadcast

	Semester IV (17 weeks)	
ELTC216	Video Systems & Transmitting Systems Theory & Equipment	5
ELTC217	T.V. Camera, Tape Recorders & Telecine Theory & Equipment	3
ELTC213	Laboratory	9
ELTC218	Test Equipment Theory and Practice	2
ELTC210	Computer Programming	1
MATH200	Mathematics	3
ENG200	Language & Communication	2
EC100	Economics	3
MECH102	Machines and Dynamics	3
		31

Area of Specialization - Computer

	Semester IV	
ELTC203	Communications Principles	3
ELTC210	Computer Programming	1
ELTC213	Laboratory	9
ELTC211	Computer Systems	7
MATH200	Mathematics	3
ENG200	Language & Communication	2
EC100	Economics	3
MECH102	Machines and Dynamics	3
		31

PROGRAM: Electronic Technician (Continued 2)

Area of Specialization - Acoustics

	Semester IV	Hours per week
ELTC203	Communications Principles	3
ELTC210	Computer Programming	1
ELTC213	Laboratory	9
ELTC214	Acoustics Systems	7
MATH200	Mathematics	3
ENG200	Language & Communication	2
EC100	Economics	3
MECH102	Machines and Dynamics	3
		31

PROGRAM: Electronic Technology
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EL5
FEES: $260 per year

GENERAL INFORMATION:

The occupational functions of the electronic technologist vary widely. In a technical capacity he may progress from the relatively simple tasks of the recent graduate to complex technical responsibilities where the exercise of judgment is required and where responsible decisions are essential. Graduates may anticipate career opportunities in areas such as the following:

- Design
- Research and Development
- Technical Sales
- Technical Writing
- Quality Control
- Plant Engineering
- Technical Teaching

PROGRAM CONTENTS:

	Semester I (15 weeks)	Hours per week
EL106	Electrical Fundamentals I	6
EL107	Electrical Fundamentals II	4
ELTC107	Electronic Fundamentals	2
ELTC109	Introduction to Electronic and Acoustic Systems	2
INST108	Instrumentation Fundamentals	6
MATH10	Mathematics	4
EL120	Drafting Fundamentals	3
ENG100	Language & Communication	2
ELTC111	Applied Circuit Analysis Part I	2
		31

	Semester II (15 weeks)	
ELTC108	Electronic Fundamentals II	9
ELTC101	Amplifiers	9
ELTC102A	AM/FM Receiver Principles	2
MATH101	Mathematics	3
PHYS100	Applied Physics	3
ENG100	Language & Communication	2
ELTC220	Drafting Fundamentals	2
ELTC111	Applied Circuit Analysis Part I	2
		32

PROGRAM: Electronic Technology (Continued)

	Semester III (15 weeks)	Hours per week
ELTC230	Electronic Circuits	5
ELTC231	Transistors	8
ELTC232	Pulse Circuits	7
MATH201T	Mathematics	5
PHYS200	Physics	3
ENG200	Elective - English	2
66% Major Subjects		30

	Semester IV (15 weeks)	
ELTC301	Computer Aided Design	2
ELTC302	Communication Technology I	5
ELTC306	Logic Systems	5
ELTC309A	System Design Principles	1
ELTC303	Solid State Design Congruent	8
MATH201T	Mathematics	5
PHYS201	Physics	3
ENG200	Elective - English	2
66% Major subjects		31

	Semester V (15 weeks)	
ELTC304	Pulse Technology	8
ELTC305	Communication Technology II	8
ELTC310	Computer Technology	8
MATH301T	Mathematics	5
ENG300	Report Writing	2
77% Major subjects		31

	Semester VI (15 weeks)	
ELTC307	Automatic Controls Systems	9
ELTC309B	Systems Design Principles	5
ELTC308	Electronic Control Design & Packaging Principles	3
ELTC300	Component Technology	6
SCIENCE303	Chemistry	4
	Elective	3
77% Major subjects		30

PROGRAM: Electrical Technologist GBC CODE: EL6
LOCATION: Casa Loma Campus FEES: $260 per year
LENGTH: 3 year program completed in 2 yrs.
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GENERAL INFORMATION:

This program is designed to provide the theory, skills, and knowledge of industrial practices required of an electrical technologist. The program comprises six 15 - week modules (3 modules per year). Employment opportunities exist in engineering, electrical power distribution, technical sales, and manufacturing.

PROGRAM CONTENT

	*Semester I (15 Week Module)	Hours per week
EL106	Electrical Fundamentals I	10
EL107	Electrical Fundamentals II	
ELTC107	Electronic Fundamentals	5
ELTC109	Introduction to Electronic and Acoustic Systems	
INST108	Instrumentation Fundamentals	6
EL131	Circuit Analysis	6
EL120	Drafting Fundamentals	3
ENG100	Language & Communication	2
		32

	Semester II (15 Week Module)	
EL108	Electrical Machines	16
EL109	Electrical Circuits	
EL231	Mathematics	4
ENG100	Language & Communication	2
EL240	Mechanics	4
EL220	Drafting Fundamentals	4
		30

	Semester IIA (6 Week Module)	
EL111	Electrical Control Systems	16
EL231	Mathematics	4
ENG100	Language & Communication	2
EL240	Mechanics	4
EL221	Electrical Drafting Fundamentals	4
		30

	Semester III (10 Week Module)	
EL213	Electrical Apparatus	22
MATH200	Mathematics	4
ENG100	Language & Communication	4
		30

PROGRAM: Electrical Technologist (Continued 1)

	Semester IV (15 Week Module)	Hours per week
EL208	Electrical Distribution Systems	16
EL209	Industrial Electronic Fundamentals	
EL211	Protection of Electrical Equipment	
MATH200	Mathematics	4
ENG200	Language & Communication	2
**EC100	Economics	4
DR203	Electrical Drafting	4
		30

	Semester V (15 Week Module)	
**EL212	Industrial Electronic Control Systems	14
DR203	Electrical Drafting	4
MATH200	Mathematics	4
ENG200	Language & Communication	4
PHYS100	Applied Physics	4
		30

	Semester VA (6 Week Module)	
***EL	Electrical Elective	16
EL138	Materials and Regulations	2
EL202	Electrical Laboratory and Installation	6
INST105	Applied Nuclear Theory	6
		30

	Semester VI (10 Week Module)	
EL601	Electrical Machine Design	10
EL602	Feedback Control Systems	8
EL603	Electronic Measuring Instruments	4
MATH300	Mathematics	4
		26

*Semester I - Common to:

Design Technician Electrical
Electrical Technician
Electronic Technician
Sound Analysis and Acoustic Technician
Instrumentation Technician

PROGRAM: Electrical Technologist (Continued 2)

**Liberal Studies Electives - e.g.

EC100	Economics
EL102	Engineering Law & Administration
PSY204	Industrial Psychology & Salesmanship
BUS100	Business Organization
BUS201	Business Organization & Financing

***Electrical Electives - e.g.

EL212	Industrial Electronic Control Systems (including laboratory)
EL213	Electrical Apparatus (including laboratory)

PROGRAM: Electronics - General
LOCATION: Teraulay Campus
LENGTH: 1 Year (48 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 12 or aptitude test

GBC CODE: EL41
OMRP CODE: 674
FEES: $5 per week

GENERAL INFORMATION:

The theory in this program is developed so that the principles involved in various circuits, modules and systems can be applied to all types of electronic equipment, both domestic and commercial. To complement the theory, practical sessions in the laboratory are given on domestic equipment such as the radio, television, hi-fi and the record changer. With this background, the graduate of this course is equipped to work effectively as a service technician in all electronic manufacturing companies, retail radio and television stores and in the small radio and television repair shop.

PROGRAM CONTENTS:

Semester I

ELTC130	Electrical and Electronic Fundamentals
ELTC131	Semi-Conductors Devices and Circuits
ELTC132	Radio Hi-Fi, and Sound Systems
ELTC133	Fundamentals Laboratory
DR133	Electronic Drafting
MATH131	Mathematics
PHYS131	Physics
ENG130	Language & Communication

Semester II

ELTC134	Pulse and Digital Circuits
ELTC135	Television Receiver Circuits and Systems
ELTC136	Colour Television and F.M. Multiplex
ELTC137	Radio and Television Laboratory
DR133	Electronics Drafting
MATH131	Mathematics
PHYS131	Physics
ENG130	Language & Communication

PROGRAM: Colour Television — GBC CODE: EL71
LOCATION: Teraulay Campus — OMRP CODE: 685
LENGTH: 10 Weeks — FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Good background training and experience in electronics, with some exposure to black and white TV.

GENERAL INFORMATION:

Graduates from this program have prepared themselves for employment in the TV repair field, either in the small shop as service technicians, or in the factory as troubleshooters.

PROGRAM CONTENTS:

ELTC131	Semi conductor devices and circuits (including pertinent parts from ELTC134)
ELTC136	Colour Television and F.M. Multiplex (including pertinent parts from ELTC132)
ELTC137	Radio and Television Laboratory

PROGRAM: Closed Circuit T. V. & Video Tape Recorder Repair & Maintenance — GBC CODE: EL72
LOCATION: Teraulay Campus — OMRP CODE: 711
LENGTH: 15 weeks — FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 11 or 2 years experience and mechanical aptitude

GENERAL INFORMATION:

To provide specialized training in CCTV techniques, including audio and VTR equipment applications, for electronic technicians with service and maintenance skills acquired in other electronic fields. Job opportunities include operating, installing, servicing and maintaining CCTV systems for transportation, hospitals, production plants, TV and recording studios, business, educational institutions, and related industries.

PROGRAM CONTENTS:

ELTC131	Semiconductor Devices and Circuits
ELTC141	Audio System Theory & Maintenance
ELTC142	Television Receiver - Monitor Theory and Applications
ELTC143	Video Signal Origination and Processing Systems
ELTC145	Laboratory

PROGRAM: Industrial Instrumentation Technician
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EN1
FEE: $260 per year

GENERAL INFORMATION:

Industrial instrumentation represents one of the key areas in the field of automation.

Instrumentation technicians are employed in all phases of industry that utilize automatic controls.

Successful candidates of the first semester may make application to enter the industrial instrumentation technology program.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
EL 106	Electrical Fundamentals 1	6
EL 107	Electrical Fundamentals 11	4
ELCT 107	Electronic Fundamentals	4
INST 108	Instrumentation Fundamentals	6
DR 100	Technical Drawing	2
MATH 101	Circuit Analysis	6
ENG 100	Lang. & Communication	2
		30

FIRST YEAR	Semester II	Hours per week
INST 100	Measuring Princ	5
INST 101	Electronic Instr.	4
INST 103	Piping & Inst. Lab Techniques	2
ENG 100	Lang. & Communication	2
PHY 100	Physics	4
MATH 100	Mathematics	4
INST 104	Telemetering	4
INST 206	Applied Electronics	5
		30

SECOND YEAR	Semester III	
INST 200	Automatic Control Principles	10
INST 201	Final Control Elements	6
MATH 200	Mathematics	4
ECO 100	Economics	4
ENG 200	Lang. & Communication	2
CHEM 100	Applied Chemistry	4
		30

SECOND YEAR	Semester IV	
INST 202	Analytical Instr.	6
INST 203	Computer Control Principles	10
MATH 200	Mathematics	4
ENG 200	Lang. & Communication	2
CHEM 100	Applied Chemistry	4
INST 305	Applied Solid State Electronics	4
INST 105	Applied Nuclear Theory (Optional)	2
		32

PROGRAM: Plastics Technician A
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EN2
FEE: $260 per year

GENERAL INFORMATION:

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1,100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapid expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

PROGRAM CONTENTS:

FIRST YEAR	Semester I & Semester II	Hours per week
PL 100	Thermoplastic Materials	3
PL 103	Thermoset Materials	2
PL 110	Thermoplastic Processes	4
PL 113	Thermoset Processes	3
PL 120	Thermoplastic Design	1
PL 123	Thermoset Design	1
DR 100	Technical Drawing	3
CHEM 110	Chemistry	4
PHYS 110	Physics	2
ENG 100	Language & Communication	2
MATH 100	Mathematics	4
EC 112	Business Organization	1
		30

SECOND YEAR	Semester III & Semester IV	
PL 200	Thermoplastic Materials	3
PL 203	Thermoset Materials	2
PL 210	Thermoplastic Processes	4
PL 211	Thermoset Processes	3
PL 220	Thermoplastic Design	3
PL 223	Thermoset Design	2
CHEM 210	Chemistry	4
PHYS 210	Physics	2
ENG 200	Language & Communication	2
MATH 201	Mathematics	4
EC 212	Business Organization	1
		30

PROGRAM: Tool and Die Design
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 of a 4 or 5 year program, which includes physics, chemistry and mathematics; drafting and shop options would be an asset.

GBC CODE: EN3
FEE: $260 per year

GENERAL INFORMATION:

The aim of the tool and die design program is to develop the necessary theoretical practical skills, He studies mathematics, metallurgy, metrology, mechanics of materials, so that his designs may be functional. In the course of his daily work routine, the designer is involved in liaison work between many company departments; so the study of language and communication is extremely important.

For the enterprising graduate, prospects of advancement exist in production, manufacturing and industrial engineering.

PROGRAM CONTENTS:

FIRST YEAR Semester I		Hours per week
ENDR 118	Descriptive Geometry	3
ENDR 158	Drafting & Design	12
MATH 100	Mathematics	4
ENG 100	Lang. & Communication	2
MECH 100	Mechanics	3
MET 100	Metallurgy	2
MACH 110	Workshop Technology	4
		30

FIRST YEAR Semester II		Hours per week
ENDR 118	Descriptive Geometry	3
ENDR 500	Jig & Fixture Design 1	4
ENDR 501	Jig & Fixture Design 11	5
ENDR 502	Jig & Fixture Design 111	2
ENDR 503	Jig & Fixture Design iv	1
MATH 100	Mathematics	4
MECH 100	Mechanics	3
ENG 100	Lang. & Communication	2
TD 110	Metrology	2
MACH 110	Workshop Technology	4
		30

SECOND YEAR Semester III		
ENDR 520	Die Design 1	8
ENDR 521	Die Design 11	7
MACH 207	Diemaking	4
MET 100	Metallurgy	2
PL 125	Plastics Fundamentals	3
MATH 200	Mathematics	4
MECH 110	Mechanics of Materials	2
ENG 200	Lang. & Communication	2
		32

SECOND YEAR Semester IV		
ENDR 522	Die Design 111	8
ENDR 523	Tool Design Theory	7
MACH 207	Diemaking	4
TD 110	Metrology	2
WELD 145/6	Welding	3
MATH 200	Mathematics	4
MECH 110	Mechanics of Materials	2
ENG 200	Lang. & Communication	2
		32

PROGRAM: Toolmaking Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EN4
FEE: $260 per year

GENERAL INFORMATION:

On the toolmaking technician program, the student can obtain the theoretical knowledge and operating skills necessary to enable him to enter toolmaking or related industries at an appropriate level.

Instruction is provided on standard machine tools and in modern techniques such as numerical control and electrical discharge machining. Related courses are offered to complement instruction in the major area. The graduate can look forward to a vital and interesting career in the modern production process, a career which demands skill, application, accuracy and cost-consciousness.

TOOLMAKING TECHNICIAN PROGRAM OUTLINE

PROGRAM CONTENTS:

FIRST YEAR Semesters I & II		Hours per week
TD 105	Tool Design (Jig & Fixtures)	4
MACH 120	Jigs & Fixtures 1	3
MACH 121	Jigs & Fixtures 11	3
MACH 122	Gauges	3
MACH 123	Diemaking	3
MACH 126	Non-Traditional Machining (Numerical Control-EDM)	2
MACH 127	Hydraulics & Pneumatics	2
TD 110	Metrology	1
MET 100	Metallurgy	1
MATH 100	Mathematics	4
MECH 100	Mechanics	2
ENG 100	Language & Communication	2
		30

SECOND YEAR Semesters III & IV		
TD 205	Die Design	4
MACH 204	Diemaking 1	4
MACH 205	Diemaking 11	4
MACH 206	Diemaking 111	2
MACH 208	Numerical Control	2
MET 100	Metallurgy	1
TD 110	Metrology	1
MATH 200	Mathematics	4
MECH 110	Mechanics of Materials	2
EL 105	Electrical Fundamentals	2
NDT 100	Non-Destructive Testing	2
ED 100	Effective Communication (Fund. of Supervision & Instructional Techniques)	2
		30

PROGRAM: Machine & Product Design — GBC CODE: EN5
LOCATION: Casa Loma Campus — FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 of a 4 or 5 year program, which includes physics, chemistry, and mathematics; drafting and shop options would be an asset.

GENERAL INFORMATION:

Machines, mechanical devices, and products of greatly sophisticated design are characteristic of modern industry. The design drawings, schematics, detail drawings, and assembly drawings for these machines and products are drawn by machine design or product design draftsmen. Through this program the student can gain the theoretical and practical knowledge which is required by draftsmen in manufacturing companies and other industrial organizations in the general mechanical field.

Graduates may be employed as draftsmen, designers, process planners, salesmen, or estimators by manufacturing industries, consulting engineers and government departments.

PROGRAM CONTENTS:

			Hours per week
FIRST YEAR		Semester I	
ENDR	118	Descriptive Geometry	3
ENDR	158	Drafting & Design	12
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
MECH	100	Mechanics	3
MET	100	Metallurgy	2
MECH	110	Workshop Technology	4
			30
FIRST YEAR		Semester II	
ENDR	102	Machine Drawing & Design	10
ENDR	118	Descriptive Geometry	3
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
MECH	100	Mechanics	3
MET	100	Metallurgy	2
ENDR	207	Kinematics	2
MACH	110	Workshop Technology	4
			30
SECOND YEAR		Semesters III & IV	
ENDR	201	Drawing & Product Design	9
ENDR	207	Kinematics	2
ENDR	222	Descriptive Geometry	4
MATH	200	Mathematics	4
MECH	110	Mechanics of Materials	2
EL	105	Electrical Fundamentals	2
PL	125	Plastics (Semester I)	3
WELD	145/146	Welding (Semester II)	3
ENG	200	Language & Communication	2
ENDR	452	Manufacturing Processes	2
			30

PROGRAM: Process Piping Design — GBC CODE: EN6
LOCATION: Casa Loma Campus — FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 of a 4 or 5 year program, which includes physics, chemistry and mathematics; drafting and shop options would be an asset.

GENERAL INFORMATION:

Employment opportunities: Pipes are the arteries and veins of any modern, industrial community. Fluids and semi-solids, essential to our existence as a highly industrialized society, are carried by pipes during their production, processing, transportation and utilization. Future developments in atomic energy, rock propulsion, petro-chemicals, food and drug production, cryogenics and pollution control, are creating demands for more sophisticated piping techniques. This challenge will require the services of highly skilled technicians and draftsmen.

The program is designed to prepare graduates for employment as technicians, draftsmen and estimators by consulting, and design engineers, public utilities and manufacturing industries.

PROGRAM CONTENTS:

			Hours per week
FIRST YEAR		Semester I	
ENDR	118	Descriptive Geometry	3
ENDR	158	Drafting & Design	12
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
MECH	100	Mechanics	3
MET	100	Metallurgy	2
MACH	110	Workshop Technology	4
			30
FIRST YEAR		Semester II	
ENDR	118	Descriptive Geometry	3
ENDR	104	Pipe Drafting & Design	10
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
MECH	100	Mechanics	3
MET	100	Metallurgy	2
ENDR	115	Structural Drafting	3
MACH	110	Workshop Technology	4
			31
SECOND YEAR		Semesters III & IV	
ENDR	204	Design & Layout of Piping Systems	10
ENDR	222	Descriptive Geometry	4
ENDR	225	Materials & Processes	2
EN	107	Mechanics of Fluids	2
INST	106	Indust. Process Instrumentation	3
CHEM	100	Chemistry	3
MATH	200	Mathematics	4
ENG	200	Language & Communication	2
			30

PROGRAM: Materials Handling Design
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 of a 4 or 5 year program, which includes physics, chemistry and mathematics; drafting and shop options would be an asset.

GBC CODE: EN7
FEE: $260 per year

GENERAL INFORMATION:

Employment opportunities: Increasing automation and the application of modern packaging and handling techniques resulted in the development of the specialized field of materials handling design. The plant layouts, estimates, schematics, assembly and detail drawings of handling equipment and systems are produced by designers and draftsmen trained in the many facets of materials handling design. This program provides the student with theoretical and practical knowledge sufficient to enable him to enter the materials handling design field. Graduates may be employed as draftsment, designers, salesmen, estimators or planners by processing and manufacturing plant, consulting engineers, primary industries and research and development companies.

PROGRAM CONTENTS:

FIRST YEAR Semester I	Hours per week
ENDR 118 Descriptive Geometry	3
ENDR 158 Drafting & Design	12
MATH 100 Mathematics	4
ENG 100 Lang. & Communication	2
MECH 100 Mechanics	3
MET 100 Metallurgy	2
MACH 110 Workshop Technology	4
	30

SECOND YEAR Semester III	
ENDR 212 Plant Layout & Handling Design	10
ENDR 222 Descriptive Geometry	4
MECH 110 Mechanics of Materials	2
ENDR 551 Industrial Engineering	2
MATH 200 Mathematics	4
ENG 200 Lang. & Communication	2
EL 106 Electrical & Electronic Fundamentals	4
PHYS 100 Physics	2
	30

FIRST YEAR Semester II	Hours per week
ENDR 118 Descriptive Geometry	3
ENDR 123 Engineering Drawing & Design	10
ENDR 115 Structural Drafting	3
MECH 100 Mechanics	3
MATH 100 Mathematics	4
ENG 100 Lang. & Communication	2
MET 100 Metallurgy	2
MACH 110 Workshop Technology	4
	31

SECOND YEAR Semester IV	
ENDR 212 Plant Layout & Handling Design	10
ENDR 222 Descriptive Geometry	4
MECH 110 Mechanics of Materials	2
ENDR 551 Industrial Engineering	2
MATH 200 Mathematics	4
ENG 200 Lang. & Communication	2
INST 107 Applied Control Theory	4
PHYS 100 Physics	2
	30

PROGRAM: Coatings Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EN9
FEE: $260 per year

GENERAL INFORMATION:

This program has been designed in conjunction with representative committees of the paint and coatings industry to prepare students to enter technical, production, sales and junior management areas of the industry. After a minimum of two years' industrial experience, the graduate will be eligible to apply to the Paint Industry Education Bureau for recognition as a paint technologist.

PROGRAM CONTENTS:

FIRST YEAR Semester I	Hours per week
CHEM 110 Chemistry	4
MATH 100 Mathematics	3
PHYS 110 Physcis	2
ENG 100 Lang. & Communication	3
PL 100 Thermoplastics	3
DR 100 Drafting	3
EC 112 Business Organization	1
CHEM 113 Organic Chemistry	3
COAT 100 Basic Paint Technology	8
	30

SECOND YEAR Semester III	
CHEM 210 Polymer Chemistry	4
MATH 201 Mathematics	4
PHYS 210 Physics	2
ENG 200 Lang. & Communication	3
EC 212 Business Organization	1
COAT 202 Thermoplastic Resins	3
COAT 203 Thermoset Resins	2
COAT 201 Coatings Lab	6
COAT 200 Coatings Technology	3
CHEM 203 Organic Chemistry Lab	2
	30

FIRST YEAR Semester II	Hours per week
CHEM 110 Chemistry	4
MATH 100 Mathematics	3
PHYS 110 Physics	2
ENG 100 Lang. & Communication	3
PL 100 Thermoplastics	3
DR 100 Drafting	3
EC 112 Business Organization	1
CHEM 111 Analytical Chemistry	3
COAT 100 Basic Paint Technology	8
	30

SECOND YEAR Semester IV	
CHEM 210 Polymer Chemistry	4
MATH 201 Mathematics	4
PHYS 210 Physics	2
ENG 200 Lang. & Communication	3
EC 212 Business Organization	1
COAT 202 Thermoplastic Resins	3
COAT 203 Thermoset Resins	2
COAT 201 Coatings Lab	6
COAT 200 Coatings Technology	3
CHEM 212 Industrial Chemistry	2
	30

PROGRAM: Orthotic-Prosthetic Techniques GBC CODE: EN10
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years (3rd year Optional)
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 of the 4 or 5 year program with chemistry, physics and preferably some shop experience.

GENERAL INFORMATION:

The graduate of the two year orthotic-prosthetic techniques will have a background in materials, fabrication, machine shop, and plastics, as well as anatomy, physiology, pathology, related to artificial limbs and braces.

PROGRAM CONTENTS:

FIRST YEAR	Hours per week
Semester I	
MED 100 Introductory Anatomy & Biomechanics	5
PROS 100 Introductory Orthopaedics	2
PROS 101 Materials & Shop Techniques	6
PL 125-1 Plastics	2
MACH 126 Machine Shop	3
DR 100 Technical Drawing	3
MECH 100 Mechanics	3
MET 100 Metallurgy	2
MATH 107 Mathematics	2
ENG 100 Lang. & Communication	2
WELD 147 Welding (1 semester)	4

FIRST YEAR	Hours per week
Semester II	
MED 100 Introductory Anatomy	4
PROS 100 Introductory Orthopaedi Orthopaedics	1
PROS 101 Materials & Shop Techniques	2
PL 125-1 Plastics	2
MACH 126 Machine Shop	4
DR 100 Technical Drawing	4
MECH 100 Mechanics	3
MET 100 Metallurgy	2
MATH 107 Mathematics	4
ENG 100 Lang. & Communication	2

SECOND YEAR	Hours per week
Semester III	
MED 200 Intermediate Anatomy	2
MED 201 Introductory Physiology	2
MED 202 Introductory Pathology	1
PSY 202 Psychology	2
PROS 200 Orthotic & Prosthetic Techniques	13
PL 125-2 Plastics	2
MECH 110 Mechanics of Materials	2
PROS 203 Field Practice	6

SECOND YEAR	Hours per week
Semester IV	
MED 200 Intermediate Anatomy	2
MED 201 Introductory Physiology	2
MED 202 Introductory Pathology	1
PSY 203 Rehabilitation	2
PROS 200 Orthotic & Prosthetic Techniques	13
PL 125-2 Plastics	2
MECH 110 Mechanics of Materials	2
PROS 203 Field Practice	6

THIRD YEAR	Hours per week
Semester V	
MED 300 Advanced Anatomy & Kinesiology	2
MED 301 Physiology	1
MED 302 Pathology	1
PROS 300 Advanced Orth/Pros Techniques Instrumentation (1 semester)	12

THIRD YEAR	Hours per week
Semester VI	
PROS 301 Physical & Occupational Therapy	1
PROS 302 Research Project	6
PROS 303 Field Practice	6
EC 113 Business Organization	1

PROGRAM: Watchmaking GBC CODE: EN11
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years (with optional 3rd year)
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent

GENERAL INFORMATION:

1. Graduates of the two year program are qualified for employment in jewellery stores as watch repairers or in precision industries as craftsmen.
2. Graduates of the three year program are qualified to service all types of complicated watches and all electric and electronic watches presently on the market except quartz crystal oscillators.

PROGRAM CONTENTS:

FIRST YEAR	Hours per week
Semester I	
WATCH 130 Theory of Watchmaking	6
WATCH 131 Watchmaking Skills	18
SBM 132 Small Business Management	2
ENG 132 Lang. & Business Correspondence	2
MET 130 Metallurgy 1	2

FIRST YEAR	Hours per week
Semester II	
WATCH 132 Theory of Watchmaking	6
WATCH 133 Watchmaking Skills	18
SBM 132 Small Business Management	2
ENG 132 Lang. & Business Correspondence	2
MET 130 Metallurgy 1	2

SECOND YEAR	Hours per week
Semester III	
WATCH 232 Theory of Watchmaking	6
WATCH 231 Watchmaking Skills	18
SBM 232 Small Business Management	3
DR 100 Drafting	3

SECOND YEAR	Hours per week
Semester IV	
WATCH 232 Theory of Watchmaking	6
WATCH 233 Watchmaking Skills	18
SBM 232 Small Business Management	3
DR 100 Drafting	3

THIRD YEAR	Hours per week
Semester V	
WATCH 330 Theory of Watchmaking	5
WATCH 331 Watchmaking Skills	19
MATH 136 Mathematics	2
ELTC 115 Electronics	4

THIRD YEAR	Hours per week
Semester VI	
WATCH 332 Theory of Watchmaking	5
WATCH 333 Watchmaking Skills	19
MATH 136 Mathematics	2
ELTC 115 Electronics	4

PROGRAM: Precision Instrument Techniques — GBC CODE: EN12
LOCATION: Casa Loma Campus
Kensington Campus — FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12; mathematics and science options would be assets.

GENERAL INFORMATION:

Employment opportunities are many and varied. Numerous industries require personnel possessing a high degree of manual skills integrated with a sound electronics background; such industries include instrument departments, control systems and guidance manufacturers, geophysical services, paramedical services, environmental and meteorological departments, aircrafts systems maintenance, etc.

PROGRAM CONTENTS:

Module I		Hours per week
EL 106	Electrical Fundamentals I	6
EL 107	Electrical Fundamentals II	4
ELTC 107	Electronic Fundamentals	4
INST 108	Instrumentation Fundamentals	6
DR 100	Technical Drawing	2
MATH 101	Circuit Analysis	6
ENG 100	Lang. & Communication	2
		30

Module II		Hours per week
INST 101	Electronic Instrumentation	9
DR 100	Applied Drawing	4
PIT 100	Horological Techniques	7
MECH 100	Mechanics	4
ENG 100	Lang. & Communication	2
MATH 100	Mathematics	4
		30

Module IIa		Hours per week
INST 206	Applied Electronics	10
PIT 100	Horological Techniques	8
MECH 100	Mechanics	4
EC 100	Economics	4
MATH 100	Mathematics	4
		30

Module III		Hours per week
INST 209	Control Theory & Application	6
MET 100	Metallurgy	3
PIT 201	Horological Techniques	8
PHYS 100	Physics	4
MATH 200	Mathematics	4
ENG 200	Lang. & Communication	2
CHEM 100	Applied Chemistry	3
		30

PROGRAM: Precision Instrument Techniques - Cont'd.

PROGRAM CONTENTS:

Module IV		Hours per week
INST 203	Computer Control Principles I	7
INST 202	Analytical Instrumentation	6
MET 100	Metallurgy	3
PHYS 100	Applied Physics	4
MATH 200	Mathematics	4
CHEM 100	Applied Chemistry	4
ENG 100	Lang. & Communication	2
		30

Module IVa		Hours per week
INST 109	Environmental Studies	4
INST 205	Applied Electronics	8
MATH 200	Mathematics	4
PHYS 100	Applied Physics	4
CHEM 100	Applied Chemistry	4
PIT 203	Industrial Preparation	2
DR 200	Applied Drawing	4
		30

PROGRAM: Industrial Instrumentation Technologist CODE: EN14
LOCATION: Kensington Campus
LENGTH: 2 Years (6 semesters) FEES: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GENERAL INFORMATION:

The Instrumentation Technologists' role in industry is primarily in design and systems modification.

Job opportunities range from challenging positions in research and development to positions in sales and service for instrument manufacturers.

PROGRAM CONTENTS:

FIRST YEAR	Module I	Hours per week
EL106	Electrical Funds I	2
EL107	Electrical Funds II	4
ELTC107	Electronic Funds.	6
INST108	Instr. Funds.	6
DR100	Technical Drawing	4
MATH101	Circuit Analysis	4
ENG100	Language & Communication	2
INST111	Applied Circuit Analysis	3
		30

FIRST YEAR	Module II	Hours per week
INST100	Measuring Principles	9
INST101	Electronic Instr.	8
INST103	Piping & Instrument Lab Techniques	3
ENG100	Language & Communication	2
MATH100T	Mathematics	4
PHYS100T	Applied Physics	4
		30

FIRST YEAR	Module III	
INST104T	Telemetering	8
INST205	Applied Electronics	10
PHYS100T	Applied Physics	4
EC100T	Economics	4
MATH200T	Mathematics	4
		30

SECOND YEAR	Module IV	
INST200	Auto. Contr. Princ.	7
INST201	Final Contr. Elements	7
INST305T	Appl. Solid State Elec.	6
ENG200	Language & Communication	2
MATH200T	Mathematics	4
PHYS200T	Modern Physics	4
		30

PROGRAM: Industrial Instrumentation Technologist (Continued)

PROGRAM CONTENTS:

SECOND YEAR	Module V	Hours per week
INST202	Analytical Instr.	6
INST203	Computer Contr. Princ. I	6
INST305T	Applied Solid State El.	4
MATH300T	Mathematics	4
ENG200	Language & Communication	2
PHYS200T	Modern Physics	4
CHEM200	Organic & Inorganic Chem.	4
		30

SECOND YEAR	Module VI	Hours per week
INST300	Auto. Contr. Princ. II	11
INST301	Computer Contr.P. II	11
CHEM300	Industrial Chem.	4
MATH300T	Mathematics	4
		30

PROGRAM: Plastics Technician C
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: EN15
FEE: $260 per year

GENERAL INFORMATION:

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapid expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

PROGRAM CONTENTS:

FIRST YEAR
Semester I

		Hours per week
PL 101	Thermoplastic Materials	3
PL 104	Thermoset Materials	2
PL 111	Thermoplastic Techniques	5
PL 114	Thermoset Techniques	4
DR 100	Technical Drawing	3
CHEM 110	Chemistry	4
PHYS 110	Physics	2
ENG 110	Lang. & Communication	2
MATH 100	Mathematics	4
EC 112	Business Organization	1
		30

FIRST YEAR
Semester II - select Either Group A of Group B

GROUP A - THERMOPLASTICS

		Hours per week
PL 102	Thermoplastic Materials	6
PL 112	Thermoplastic Techniques	8
DR 100	Technical Drawing	33
CHEM 110	Chemistry	4
PHYS 110	Physics	2
ENG 110	Lang. & Communication	2
MATH 110	Mathematics	4
EC 112	Business Organization	1
		30

GROUP B - THERMOSETS

PL 105	Thermoset Materials	6
PL 115	Thermoset Techniques	9
DR 100	Technical Drawing	3
CHEM 110	Chemistry	4
PHYS 110	Physics	2
ENG 110	Lang. & Communication	2
MATH 100	Mathematics	4
EC 112	Business Organization	1
		30

PROGRAM: Plastics Technician C - Cont'd.

SECOND YEAR - Select either Group A or Group B, depending upon first year choice.

Semester III

GROUP A - THERMOPLASTICS

		Hours per week
PL 201	Thermoplastic Materials	6
PL 211(a)	Thermoplastic Techniques	10
CHEM 210	Chemistry	4
PHYS 210	Physics	2
ENG 200	Lang. & Communication	3
MATH 201	Mathematics	4
EC 212	Business Organization	1
		30

GROUP B - THERMOSETS

PL 204	Thermoset Materials	6
PL 212	Thermoset Techniques	10
CHEM 210	Chemistry	4
PHYS 210	Physics	2
ENG 200	Lang. & Communication	3
MATH 201	Mathematics	4
EC 212	Business Organization	1
		30

Semester IV

GROUP A - THERMOPLASTICS

		Hours per week
PL 201	Thermoplastic Materials	3
PL 211(a)	Thermoplastic Techniques	5
CHEM 210	Chemistry	4
PHYS 210	Physics	2
ENG 200	Lang. & Communication	3
MATH 201	Mathematics	4
EC 212	Business Organization Plus 1 elective representing 8 hours per week	1
		22

GROUP B - THERMOSETS

PL 204	Thermoset Materials	3
PL 212	Thermoset Techniques	5
CHEM 210	Chemistry	4
PHYS 210	Physics	2
ENG 200	Lang. & Communication	3
MATH 201	Mathematics	4
EC 212	Business Organization Plus 1 elective representing 8 hours per week	1
		22

PROGRAM: Business Equipment Servicing — GBC CODE: EN41
LOCATION: Casa Loma Campus — OMRP CODE: 605
LENGTH: 48 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 12 (preferably) or Grade 10 and satisfactory completion of specified aptitude tests.

GENERAL INFORMATION:

This program is designed to provide theoretical and practical knowledge of manual and electric typewriters, electric and electronic calculators, photocopy and dictating machines.

A business machine representative analyses and solves problems which occur on business equipment and assists customers to operate machines in a proper manner. The prospective representative should display a good mechanical aptitude, be neat and presentable, and be able to co-operate with other people. He should possess a current driving licence.

Because machines are increasing in number and in complexity, prospects in this occupation are excellent for the man who is ambitious and capable of working with a minimum of supervision.

PROGRAM CONTENTS:

Semesters I & II

BES	100	Typewriters
BES	101	Figuring Machines
BES	102	Photocopying Machines
BES	103	Dictating Machines
ELTC	130	Electrical and Electronic Fundamentals
MATH	131	Mathematics
ENG	130	Language & Communication
BES	104	Logic Fundamentals
BES	105	Fundamentals Laboratory
BES	106	Business Machines

PROGRAM: Industrial Instrumentation Mechanic — GBC CODE: EN42
LOCATION: Kensington Campus — OMRP CODE: 628
LENGTH: 40 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GENERAL INFORMATION:

The industrial instrumentation mechanic program operates under the individualized learning concept. This means that a student is allowed to progress at his own learning rate in order to achieve the program objective. Student intakes are continuous.

Instrument mechanics are employed in all phases of industry, particularly in the construction of new plants. Instrument mechanics install, calibrate, and maintain all types of pneumatic and electronic process instruments.

PROGRAM CONTENTS:

Semesters I & II

INST	130	Pressure Measurement
INST	130	Flow Measurement
INST	130	Level Measurement
INST	130	Temperature Measurement
INST	130	Pneumatic Theory & Instruments
INST	130	Pneumatic Instrument Application
INST	130	Control Theory & Systems
ENG	130	Language & Communication
INST	131	D.C. Theory
INST	131	A.C. Theory
INST	131	Transistor & Electron Tube Theory
INST	131	Electronic Circuits
INST	131	Electrical & Electronic Instruments
INST	131	Electrical & Electronic Instrument Application
INST	132	Valves
INST	132	Mechanical Practices
MATH	132	Mathematics
INST	133	Analytical Instrumentation
DR	137	Applied Drawing

PROGRAM: Machine Shop Practice
LOCATION: Casa Loma Campus
LENGTH: 1 Year (40 Weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: EN44
ORMP CODE: 808
FEE: $200.00

GENERAL INFORMATION:

This program is designed to prepare students for entry into industry as machinists, apprentices, or machine operators. The category in which a student finds employment depends upon his age, previous experience, and the levels of skill and knowledge which he has acquired. Students find it advantageous to have completed Grade 12 in machine shop but, with suitable aptitudes and a willingness to work hard, those who have completed Grade 10 may prove successful in the program and later become good machinists.

Instruction is particularly concerned with measurement and machining to close tolerances, combined with production speeds and efficiencies of manufacture, sharpening cutting tools, and setting up machines.

PROGRAM CONTENTS:

Semester I & II

MACH	140	Benchwork
MACH	141	Lathework
MACH	142	Milling and Shaping
MACH	143	Grinding
MACH	145	Numerical Control
WELD	145	Welding
WELD	146	Welding
DR	130	Blueprint Reading
MET	132	Metallurgy
MATH	136	Mathematics
PHYS	140	Physics
ENG	130	Language & Communication

PROGRAM: Set-up Man - Thermoplastic (Machine Moulding)
LOCATION: Casa Loma Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 with Drafting

GBC CODE: EN45
FEE: $135.00

PROGRAM CONTENTS:

			Hours per week
PL	130	Thermoplastic Materials	4
PL	133	Thermoplastic Processes	14
PL	136	Thermoplastic Design	8
CHEM	135	Chemistry	1
PHYS	135	Physics	1
ENG	141	Language & Communication	1
MATH	133	Mathematics	1
			30

PROGRAM: Operator - Thermoplastic (Forming & Fabricating)
LOCATION: Casa Loma Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 with Drafting

GBC CODE: EN46
FEE: $135.00

PROGRAM CONTENTS:

			Hours per week
PL	131	Thermoplastic Materials	4
PL	134	Thermoplastic Processes	14
PL	137	Thermoplastic Design	8
CHEM	135	Chemistry	1
PHYS	135	Physics	1
ENG	141	Language & Communication	1
MATH	133	Mathematics	1
			30

PROGRAM: Operator - Thermoset (Hand Lay-up) GBC CODE: EN47
LOCATION: Casa Loma Campus FEE: $135.00
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 with Drafting

PROGRAM CONTENTS:

			Hours per week
PL	132	Thermoset Materials	4
PL	135	Thermoset Processes	14
PL	138	Thermoset Design	8
CHEM	135	Chemistry	1
PHYS	135	Physics	1
ENG	141	Language & Communication	1
MATH	133	Mathematics	1
			30

PROGRAM: Operator - Thermoset (Machine Moulding)
LOCATION: Casa Loma Campus GBC CODE: EN48
LENGTH: 1 Semester FEE: $135.00
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 with Drafting

PROGRAM CONTENTS:

			Hours per week
PL	140	Thermoset Materials	4
PL	141	Thermoset Processes	14
PL	139	Thermoset Design	8
CHEM	135	Chemistry	1
PHYS	135	Physics	1
ENG	141	Language & Communication	1
MATH	133	Mathematics	1
			30

PROGRAM: Plastics Technician B - Thermosets GBC CODE: EN49
LOCATION: Casa Loma Campus FEE: $260.00
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12

GENERAL INFORMATION:

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapid expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

PROGRAM CONTENTS:

Semester I & Semester II			Hours per week
PL	103	Thermoset Materials	5
PL	203	Thermoset Materials	
PL	113	Thermoset Processes	8
PL	211	Thermoset Processes	
PL	123	Thermoset Design	1
PL	223	Thermoset Design	
DR	100	Technical Drawing	3
CHEM	110	Chemistry	4
PHYS	110	Physics	2
ENG	100	Language & Communication	3
MATH	100	Mathematics	4
EC	112	Business Organization	1
			31

PROGRAM: Plastics Technician B - Thermoplastics GBC CODE: EN50
LOCATION: Casa Loma Campus FEE: $260.00
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12

PROGRAM CONTENTS:

Semester I & Semester II			Hours per week
PL	100	Thermoplastic Materials	5
PL	200	Thermoplastic Materials	
PL	110	Thermoplastic Processes	7
PL	210	Thermoplastic Processes	
PL	120	Thermoplastic Design	5
PL	220	Thermoplastic Design	
CHEM	110	Chemistry	4
PHYS	110	Physics	2
ENG	100	Language & Communication	3
MATH	100	Mathematics	4
EC	112	Business Organization	1
			31

PROGRAM: Welder Fitter
LOCATION: Kensington Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: EN51
ORMP CODE: 815
FEE: $5.00 per week

GENERAL INFORMATION:

Graduates of this program are well prepared to advance beyond the operator level to positions of responsibility in the welding industry. Welding supervision, inspection, sales, and manufacturers representatives are examples of positions now held by previously successful graduates.

Students graduating from this program will be considered for the welding specialist program, which is designed to prepare graduates to proceed toward positions in the welding industry at the technician level.

PROGRAM CONTENTS:

Semesters I & II

WELD	140	Oxy-acetylene Welding, Brazing and Cutting/Theory & Practice
WELD	141	Electric Arc Welding/Theory & Practice
WELD	142	Fabrication/Theory & Practice
WELD	143	Gas Tungsten Arc Welding/Theory & Practice
WELD	144	Pipe Welding/Theory & Practice
DR	134	Plate & Structural Layout
DR	135	Blueprint Reading
MATH	136	Mathematics
ENG	130	Language & Communication

PROGRAM: Welding Operator
LOCATION: Kensington Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 minimum

GBC CODE: EN52
ORMP CODE: 816
FEE: $5.00 per week

GENERAL INFORMATION:

This program provides an excellent opportunity for any man between the ages 16 and 50 to learn a useful skill in a relatively short period of time and to work toward the mechanic's level in a well-paying trade. Evening courses in special welding techniques are readily available for the ambitious person wishing to prepare for advancement.

PROGRAM CONTENTS:

WELD	130	Oxy-acetylene Welding, Brazing & Cutting/Theory & Practice
WELD	131	Electric Arc Welding/Theory & Practice
DR	147	Blueprint Reading
ENG	141	Language & Communication

PROGRAM: Welding Specialist
LOCATION: Kensington Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12 or equivalent education and
(a) Specialization in welding in a secondary school or
(b) Successful completion of a welder fitter program in a College of Applied Arts and Technology or
(c) Approved industrial experience

GBC CODE: EN53
FEE: $260 per year

Pre-entry training or upgrading can be arranged for candidates who do not possess the stated prerequisites.

GENERAL INFORMATION:

The welding specialist has a sound background knowledge of manual, semi-automatic, and automatic welding processes and equipment, weld inspection, quality control and metallurgical principles, and production procedures.

With the continued development of increasingly sophisticated welding equipment, many new and interesting occupations are available in the welding industry. A successful graduate of the welding specialist program may expect to advance toward positions in manufacturing industries, sales, technical service, weld testing and inspection, quality control, and design at the technician level.

PROGRAM CONTENTS:

Semesters I & II

			Hours per week
WELD	100	Manual Welding Processes/ Gas & Arc	5
WELD	101	Gas Tungsten Arc Welding	2
WELD	102	Semi-automatic & Automatic Welding Processes	3
WELD	103	Industrial Welding Applications & Shop Procedures	5
MET	100	Metallurgy	2
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
EL	100	Electrical Fundamentals	2
DR	118	Descriptive Geometry	2
DR	105	Technical Drawing	3

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Welder Fitter Refresher
LOCATION: Kensington Campus
LENGTH: 1 Semester (20 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Basic knowledge of welding theory; manipulative skills necessary for reasonably good quality workmanship in the flat and horizontal positions, using electric arc and oxy-acetylene processes; a pre-induction theory and practical test is required.

GBC CODE: EN54
OMRP CODE: 822
FEE: $5.00 per week

GENERAL INFORMATION:

This program is designed to build upon and improve already acquired welding skills to levels necessary to pass an all-position welding test of the standard required by the Boiler Inspection Branch of the Ministry of Consumer and Commercial Relations. Graduates may expect to find employment at the mechanic's level in any one of the wide variety of industrial welding positions or related occupations.

PROGRAM CONTENTS:

WELD	140	Oxy-Acetylene Welding, Brazing Cutting/ Theory & Practice
WELD	141	Electric Arc Welding/Theory & Practice
WELD	142	Fabrication/Theory & Practice
WELD	143	Gas Tungsten Arc Welding/Theory & Practice
DR	134	Plate & Structural Layout
DR	135	Blueprint Reading
MATH	136	Mathematics

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Mechanical Engineering Drafting
LOCATION: Casa Loma Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 10, with competence in mathematics and science.

GBC CODE: EN60
FEE: $160 per year

GENERAL INFORMATION:

The objective of this program is to prepare the student for employment as a junior draftsman in the general mechanical engineering field. The graduate will be competent in detail drawing, assembly drawing, freehand sketching and the construction of engineering graphs and charts. He will gain acceptance in the drawing offices of manufacturing companies, consulting engineers, process piping engineers, tool design consultants, and materials handling engineers. The broad training given in this program will enable the graduate to fill other technical positions where competence in drawing is required, such as engineering office clerk, technical salesman, parts inspector, and production expediter.

PROGRAM CONTENTS:

Semester I			Hours per week
ENDR	100	Mechanical Drawing	8
ENDR	300	Descriptive Geometry	4
ENDR	351	Materials Handling	6
MACH	144	Machine Shop Practice	6
MATH	121	Mathematics	4
ENG	121	Language & Communication	2
			30

Semester II			
ENDR	101	Machine Drawing	6
ENDR	300	Descriptive Geometry	4
ENDR	400	Process Piping	4
ENDR	451	Methods, Tooling & Materials	7
MACH	144	Machine Shop Practice	3
MATH	121	Mathematics	4
ENG	121	Language & Communication	2
			30

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Lathe Operator
LOCATION: Casa Loma Campus
LENGTH: 1 Session (12 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: EN75
OMRP CODE: 807
FEE: $5.00 per week

GENERAL INFORMATION:

This program is designed to prepare students for entry into industry as lathe operators. Persons who have completed grade 12 and have an interest in the machine tool industry will find this program most suitable as preparation for initial employment as a toolroom or production lathe hand.

PROGRAM CONTENTS:

MACH	137	Small Tools & Measurement
MACH	138	Lathe & Ancillary Equipment
DR	140	Blueprint Reading
MATH	133	Mathematics.

PROGRAM: Blueprint Reading For Welders
LOCATION: Casa Loma Campus
LENGTH: 16 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8

GBC CODE: EN76-77
OMRP CODE: 688-689
FEE: $5.00 per week

GENERAL INFORMATION:

This program was developed specifically for the welder wishing to broaden his employment capability. Upon completion of the program, the welder will know the basic language of drafting standards for welding detail and assembly drawings, and will have gained experience in pattern developments, welding symbols, and dimensioning procedures. The reading of up to date blueprints is extensively practised throughout this program.

PROGRAM CONTENTS:

ENDR	259/260	Blueprint Reading
MATH	10/20	Mathematics
ENG	10/20	Language & Communication

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM PENDING: Apparel Engineering Technology
LOCATION: Kensington Campus
LENGTH: 3 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 with mathematics; spatial concention; digital and dexterity tests; interview.

FEES: $260 per year

GENERAL INFORMATION:

The program is designed to train students to fill current employment opportunities as plant managers and production supervisors, primarily in Ontario, but also in the Canadian apparel industry.

This program is awaiting final approval for the following five options in the second year: supervisor, couture workroom supervisor, apparel design, furriery, and apparel buying.

Candidates who successfully complete the 2-year program are awarded a diploma as an apparel engineering technician, while the successful completion of the 3-year program carries with it the diploma of the apparel engineering technologist.

PROGRAM CONTENTS:

FIRST YEAR	Semester I (14 Weeks - September to December)	Hours per week
AT100	Methods Engineering I	3
AT121	Industrial Organization I	2
	Engineering Apparel Drafting I	3
AT151	Apparel Machine Technology: Seam Engineering	4
FAB150	Textiles, Fabrics, Trims I: Characteristics	2
	Computer Mathematics	5
AT171	Apparel Production Management I	5
AT161	Operator Training (Sew 141)	2
ENG151	Vocabulary of Fashion: Communication	2
EC175	Economics of Canadian Apparel Industry	2
		30

(December to February--8 weeks in-plant training)

FIRST YEAR	Semester II (18 Weeks - March to June)	
AT101	Methods Engineering II	3
AT122	Industrial Organization II	2
PAT141	Apparel Pattern Drafting II	4.5
AT152	Apparel Machine Technology II	4.5
FAB151	Textiles II: Knits, Dyes, Processing	2
	Computer Mathematics, Programming	5
AT172	Apparel Production Management II	4
SEW151	Operator Training: Incentives	2
ENG151	Vocabulary of Fashion	2
EC176	Government Programs	1
		30.0

(Paper on industrial experience due in March)

PROGRAM PENDING: Apparel Engineering Technology (Continued)

SECOND YEAR	Semester III (14 Weeks) (September to December)	Hours per week
AT200	Methods Engineering III	3
PAT241	Apparel Pattern Analysis III:Construction	4
AT251	Apparel Machine Technology III: Cutting, etc.	4
FAB250	Textiles III: Behaviour, Molding Computers, E.D.P. Systems	4
AT271	Apparel Production Management III	4
AT260	Apparel Plant Supplies: Characteristics	2
ENG251	English in the Fashion World: Reports	2
BUS	Managerial Accounting: Principles, Budgets	3
		30

(December to February--8 weeks in-plant training)

SECOND YEAR	Semester IV (18 Weeks - March to June)	
AT201	Methods Engineering IV	3
PAT242	Apparel Pattern Grading IV: Markers	3
AT252	Apparel Construction: Steps	3
FAB251	Textiles IV: Testing, Furst, etc.	3
	Computers: Apparel Applications	5
AT272	Apparel Production Management IV: M.B.O.	4
SEW252	Sewing: Special Machines	2
PAT253	Apparel Product Engineering IV	3
ENG252	English in the Fashion World: Media	2
BUS	Managerial Accounting: Finance	2
		30

(Paper on industrial experience due in March)

The prerequisite for admission to the 3rd year is successful performance in the first 4 semesters, with at least 3.0 GPA or equivalent.

Only students showing special aptitudes, or with an industrial engineering background may be selected to go on for the apparel engineering technologist diploma.

A thesis based on the student's industrial experience is required by 15 April.

PROGRAM PENDING: Apparel Engineering Technology (Continued 2)

PROGRAM CONTENTS:

THIRD YEAR Semester V (12 Weeks - September to 15 November)

Semester VI (16 Weeks - March to 15 June)

(12 weeks between semesters of in-plant training)

Advanced levels in:

AT350	Automated Machinery
AT320	Large-Plant Problems
AT370	Multi-Plant Problems
FAB350	Fabrics
	Delivery Schedules
	Advanced Computer Uses

Optional content described as apparel management is also planned for the third year.

PROGRAM: Creative Fashions (Apparel)
LOCATION: College Street Campus
LENGTH: 2 Years (3rd year optional)
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent and instructor's evaluation, sewing training and aptitude

GBC CODE: FT1
FEES: $260 per year

GENERAL INFORMATION:

The program is designed to develop the creativity of the student in fashion disciplines, culminating in original styles, patterns, and finished garments for the women's apparel and fur industries. The student may specialize in the second year in specific areas, such as, draping and pattern design; fur recognition and manufacturing techniques; care, maintenance and marketing of wild and ranched furs; business management; merchandising; production machines; and couture sewing, and workroom supervision; language of fashion.

PROGRAM CONTENTS:

FIRST YEAR	Semester I - Common	Hours per week
SEW145	Industrial Power Sewing, Work & MTM	5
FUR146	Fur and Marketing of Fashion	2
PAT141	Pattern Drafting	6
PAT142	Styling, Research, Colour, Design	2
PAT144	Fashion Illustration	3
DRES141	Construction, Layout, Samples, etc.	6
DRES142	Fabrics	2
ENG151	Vocabulary of Fashion	2
FASH100	Fashion Business Procedures	2
		30

FIRST YEAR	Semester II	
SEW145	Industrial Power Sewing, Work & MTM	5
FUR146	Fur and Marketing of Fashion	1
PAT151	Pattern Drafting	6
PAT143	Styling, Research, Colour, Design	2
PAT154	Fashion Illustration	3
DRES151	Construction, Layout, Samples, etc.	6
DRES152	Fabrics	2
ENG161	Vocabulary of Fashion	2
FASH101	Fashion Business Procedures	2
		30

Several projects for display or fashion shows are required.
Various reference books and periodicals are used, relating to fabrics, fur, leather, patterns, fashion, etc. Students will also develop their own style book.

PROGRAM: Creative Fashions (Apparel) (Continued)

OPTION I - Apparel Section Supervisor

The prerequisite for admission to option I is as follows: Satisfactory standing in the 1st year, or equivalent work experience; honour standing in Industrial Power Sewing, with make-up in Fur 143 & 145, Pat 141 & 151 and Dres 141 & 151.

PROGRAM CONTENTS:

SECOND YEAR	Semester III	Hours per week
SEW245	Sewing Machines, Time Studies	6
SEW244	Special Machines, Cutting, Ironing	5
SEW241	Apparel Plant Supplies, Types	5
AT171	Apparel Production: Human Relations	5
AT161	Operator Training & Cutters	3
ENG261	Language of Fashion (History)	3
FASH201	Fashion Business Procedures (Corporate Structure, etc.)	3
		30

SECOND YEAR	Semester IV	
SEW242	Machines (Special Operations, Attachments)	6
AT172	Apparel Production: Labour Management Relations	4
AT162	Operator Training: Incentives	3
FAB150	Fabric, Thread Characteristics (Stitches)	3
AT151	Apparel Machine Technology	4
PAT242	Markers, Layout	3
ENG251	Language of Fashion (Shows, etc.)	3
FASH211	Fashion Business Procedures (Sec. 2) (Inventory, costing, etc.)	4
		30

On-the-job training days are scheduled for each student.

OPTION II Couture Workroom Supervisor

The prerequisite for admission to option II is as follows: Satisfactory standing in the 1st year, or equivalent work experience; honour standing in Custom Dressmaking & Alterations, with make-up in Fur 143 & 145, Pat 141 & 151 and Pat 142.

PROGRAM CONTENTS:

SECOND YEAR	Semester III & Semester IV	
DRES241	Couture Construction Engineering	7
DRES242	Fabrics, Knits, Trims, Braids	4
DRES244	Alterations, Fitting: Advanced	6
AT171	Apparel Production: Human Relations	2
SEW242	Machines, Special Operations	2

PROGRAM: Creative Fashions (Apparel) (Continued 2)

OPTION II Couture Workroom Supervisor

SECOND YEAR	Semester III & Semester IV (Continued)	Hours per week
PATT241	Pattern Drafting: Changes	2
DRES248	Buying--Materials, Supplies	2
ENG251	English of the Fashion World :Fashion Shows; Media	2
FASH201	Fashion Business Procedures: Advanced (Costing, etc.)	3
		30

Periodic on-the-job training required during the year.

OPTION III Apparel Design

The prerequisite for admission to option III is as follows: Satisfactory standing in the 1st year, or equivalent work experience: honour standing in Apparel Design and Pattern Drafting, with make-up in Fur 143 & 145, Dres 142 & 152, Fash 100 & 101.

PROGRAM CONTENTS:

SECOND YEAR	Semester III	Hours per week
SEW245	Sewing Machines, Time Studies	3
DRES251	Apparel Construction: Engineering (Advanced)	5
DRES246	Tailoring, Special Finishes	4
PATT251	Pattern Drafting, Grading	5
PAT252	Draping and Design	3
PATT244	Fashion Illustration: Media	3
JWL260	Introduction to Jewellery	3
ENG261	Language of the Fashion World (History)	2
FASH201	Fashion Business Procedures: Advanced (Fashion Shows), Costing	2
		30

SECOND YEAR	Semester IV	
SEW244	Special Machines, Cutting, Ironing (Condensed)	2
PAT241	Pattern Drafting and Changes	5
PAT262	Draping, Design	2
PAT243	Fashion Research, Co-ordination	2
PAT254	Fashion Illustration: Media	3
PAT245	Theatre, T.V. Costume Design	2
DRES256	Tailoring, Special Finishes	4
DRES247	Apparel Construction: Samples	4
ENA270	Enamelling: Accessories	3
ENG251	Language of the Fashion World (Shows)	2
FASH211	Fashion Business Procedures	1
		30

Periodic on-the-job or free-lance success required during the year.

PROGRAM: Creative Fashions (Apparel) (Continued 3)

OPTION IV Furriery

The prerequisite for admission to option IV is as follows: Satisfactory standing in the 1st year, or equivalent work experience: honour standing in Fur Program FT-43, with make-up in Pat 141 & 151, Sew 141, and Dres 141 & 151.

PROGRAM CONTENTS:

SECOND YEAR	Semester III& Semester IV	Hours per week
FUR243	Fur Recognition: Look-Alikes	4
FUR244	Manufacturing Techniques: Advanced	6
FUR245	Fur Design, Pattern Drafting	6
FUR247	Fur Buying, Skins, Garments	2
SEW245	Sewing Machines, Time Studies	3
DRES241	Apparel Construction Engineering	3
ENG251	Language of the Fashion World: Fashion Shows	3
FASH201	Fashion Business Procedures: Advanced Costing, Inventory Control	3
		30

Periodic on-the-job training required during the year.

OPTION V Apparel Buying

The prerequisite for admission to option V is as follows: Satisfactory standing in the 1st year, or equivalent work experience; honour standing in Apparel Design and Pattern Drafting or Fur Program FT-43, with make-up in Dres 141 & 151, Pat 144 & 154, Dres 142 & 152, as applicable.

PROGRAM CONTENTS:

SECOND YEAR	Semester III	
FUR247	Fur Buying, Skins, Garments	2
DRES249	Workroom Problems and Management	5
AT171	Apparel Production II: Human Relations	2
DRES241	Apparel Construction: Engineering	7
PAT244	Fashion Illustration	3
FAB150	Fabric Characteristics	3
MARK100	Marketing: Buying	5
ENG251	English of the Fashion World: Fashion Shows	3
		30

PROGRAM: Creative Fashions (Apparel)(Continued 4)

OPTION V Apparel Buying (Continued)

SECOND YEAR	Semester IV	Hours per week
AT172	Apparel Production IV	5
DRES256	Tailoring, Special Finishes	5
DRES248	Buying: Materials, Supplies	5
MARK202	Merchandising	5
ENG261	English of the Fashion World	3
EDP100	E.D.P.:Point of Sale Machines	5
FASH201	Fashion Business Procedures	2
		30

Periodic on-the-job training is required during the year.

OPTIONAL THIRD YEAR Apparel Management

The prerequisite for admission to the optional 3rd year is as follows: Minimum of 3.0 GPA in 2-year program, or equivalent in work experience.

PROGRAM CONTENTS:

THIRD YEAR	Semester V & VI	
EDP201	Data Processing Systems	5
MARK205	Marketing Management (Sem. I)	
or		
MARK206	" " (Sem. II)	5
ACC202	Cost Accounting I (Sem. I)	
or		
ACC204	" " (Sem.II)	5
AT371	Personnel Problems: Hiring	3
PAT341	Designing and Drafting (Advanced Style Projection)	5
DRES341	Apparel Projection: Techniques	5
ENG351	Language of the Fashion World: Reports, Supplier-to-Customer Communication, Media	2
		30

Periodic on-the-job training required during the year.

PROGRAM: Jewellery Arts GBC CODE: FT2
LOCATION: Casa Loma Campus FEES: $260 per year
LENGTH: 2 Years Optional 3rd Year
CERTIFICATION: Diploma
PREREQUISITE: Grade 12, preferably with art options; or a mature student with demonstrated interest and/or ability.

GENERAL INFORMATION:

Specialization is growing and our jewellery arts program is designed with this in mind. The initial 10 weeks of the 2-year program are devoted to the care and use of tools and equipment, basic processes, techniques, and elementary design. During the balance of the first year and the whole of the second year, students may select an area of concentration: goldsmithing, gem-setting, engraving, or silversmithing. In order to qualify for a certificate, a student must participate in all designed areas in order to gain sufficient credits: (20 credit hours for first year and 21 credit hours for the second year). A third year is also offered, of 23 credit hours.

Candidates who successfully complete the 2-year program are awarded a diploma as a jewellery arts technician, while the successful completion of the 3-year program carries with it the dimploma of the jewellery art technologist.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II	Hours per week
JWL160	Introduction to Jewellery (Specialization depends on 10-week operation)	
JWL161	Goldsmithing	
OR		14
JWL162	Gem-setting	
OR		
JWL163	Engraving	
OR		
JWL164	Silversmthing	
JWL165	Theory of the Area of Specialization	2
MET166	Metallurgy	1
GEM167	Gemmology	2
CHEM168	Chemistry	1
DES169	Design	3
ENG132	Language & Communication	2
SBM132	Small Business Management	2
ENA170	Enamelling	3
		30

PROGRAM: Jewellery Arts (Continued)

SECOND YEAR	Semesters III & IV	Hours per week
Specialization depending on first year Operation		
JWL261	Goldsmithing	
OR		
JWL262	Gem-setting	
OR		19
JWL263	Engraving	
OR		
JWL264	Silversmithing	
JWL265	Theory of the Area of Specialization	3
MET266	Metallurgy	1
GEM267	Gemmology	2
DES269	Design	3
ENA270	Enamelling	2
		30

THIRD YEAR	Semesters V & VI	
Programs are arranged on an individual basis.		
JWL361	Goldsmithing	
JWL362	Gem-setting	
JWL363	Engraving	23
JWL364	Silversmithing	
JWL365	Theory	2
GEM367	Gemmology	2
DES369	Design	3
		30

PROGRAM: Apparel Design and Pattern Drafting GBC CODE: FT40
LOCATION: College Street Campus OMRP CODE: 624
LENGTH: 32 Weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Keen interest, interview, 8-week appraisal and evaluation period.

GENERAL INFORMATION:

This program is designed to train students for entry into the following branches of the fashion industry: women's apparel industries; boutique shops; stylist, fashion illustration; sample making; designing (commercial, custom and costume); children's wear, etc.

This is a practical program to develop a student's competence in creative design, covering such areas as foundation blocks to manufactured sizes; styling; analyzing existing styles; form; colour; textures; research; grading sizes; making samples, cutting, marking, sketching; etc. Techniques used are "on the flat".

PROGRAM CONTENTS:

Semester I

PAT141	Apparel Pattern Drafting
PAT143	Design, Colour, Texture
PAT144	Fashion Illustration
DRES141	Apparel Construction, Samples, Finishes
SEW141	Power Sewing Machines & Irons
ENG151	Vocabulary of Fashion

Semester II

PAT151	Apparel Pattern Drafting (Advanced)
PAT142	Pattern Grading, Fashion Research, Copies, Styling, Textiles.
PAT153	Design, Colour, Texture (Advanced)
PAT154	Fashion Illustration (Sec. 2)
DRES151	Apparel Construction, Samples Finishes (Sec. 2)
SEW141	Power Sewing & Irons
ENG161	Vocabulary of Fashion (Sec. 2)

Available full-time or part-time.
Several projects for display or fashion shows are required.
Various reference books and periodicals are used, relating to fabrics, leather, fur, patterns, etc. Students will also develop their own style book.

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Custom Dressmaking & Alterations GBC CODE: FT41
LOCATION: College Street Campus OMRP CODE: 616
LENGTH: 28 Weeks (2 Semesters) FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Level 6 English; keen interest; 6-week appraisal and evaluation period.

GENERAL INFORMATION:

This is a practical program designed for those wishing to find employment in the following branches of the women's fashion industry: custom dressmaking; fitting; workroom of stores and boutiques; altering; finishing; sample making; selling (textiles, patterns, trims, apparel stores, costume rentals).

Fundamental skills of domestic and industrial professional sewing by hand and machine are taught for a wide range of contemporary fabrics.

PROGRAM CONTENTS:

Semester I

DRES141	Construction, layout, cutting, samples, finishes, sewing techniques
DRES142	Textiles, fabrics, knits, trims, braids, etc.
DRES144	Fitting, alterations, care of garments
DRES145	Patterns, fashions, personal appearance
SEW141	Machines, Domestic and Power Sewing and Ironing Machines
FASH100	Fashion Business Routines
ENG151	Vocabulary of Fashion

Semester II

DRES151	Construction, layout, cutting, samples, finishes, sewing techniques (advanced)
DRES152	Textiles, fabrics, knits, trims, braids, etc. (Sec. 2)
DRES154	Fitting, alterations, etc. (Sec. 2)
DRES155	Patterns, fashions, etc. (Sec. 2)
SEW141	Machines (cont'd)
FASH101	Fashion Business Procedures
ENG161	Vocabulary of Fashion (Sec. 2)

Various reference book and periodicals are used, relating to fabrics, suedes, furs, patterns, styling, etc.
Available full-time or part-time.

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Industrial Power Sewing GBC CODE: FT42
LOCATION: College Street Campus OMRP CODE: 639
LENGTH: 24 Weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Keen interest, dexterity test

GENERAL INFORMATION:

This program is designed to provide the student with the basic sewing skills and techniques used in the apparel manufacturing industries on the most commonly used industrial power sewing machines.

PROGRAM CONTENTS:

SEW141	Single-Needle Power M/C
SEW142	Serger Machine
SEW143	Blind-Stitch Machine
SEW144	Buttonhole Machine; Button-Sew Machine
ENG150	Vocabulary of Apparel

A minimum of two weeks on-the-job training is required to qualify for a certificate.

Available full-time or part-time.

PROGRAM: Fur Business & Manufacturing Techniques
LOCATION: College Street Campus
LENGTH: 40 Weeks (2 Semesters)
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or test; interview

GBC CODE: FT43
OMRP CODE: 1007
FEES: $5 per week

GENERAL INFORMATION:

The only one in Canada, this program will give men and women an integrated program in fur; it will develop in them skills in, and knowledge of, the industry and its materials, techniques and products; it will equip them for gainful employment, by standardizing general and technical fur knowledge in such a way that they will be able to work profitably in any division in the fur industry and in some other trades where fur is used.

PROGRAM CONTENTS:

FIRST YEAR	Semester I
FUR143	Fur Theory and Recognition
FUR144	Fur Manufacturing Techniques
FUR145	Fur Fashions
FUR147	Fur Marketing
ENG151	Vocabulary of Fashion
FASH100	Fashion Business Routines
	Semester II
FUR153	Fur Theory and Recognition (Sec. 2)
FUR154	Fur Manufacturing Techniques (Adv.)
FUR155	Fur Fashion and Design
FUR157	Fur Marketing (Advanced)
ENG161	Vocabulary of Fashion (Sec. 2)
FASH101	Fashion Business Procedures

A minimum of 2 weeks on-the-job training is required during Semester II.
A fur sample book is a required project in FUR143.
FUR143, 144 & 145 are also available during the daytime, as part-time courses. All courses are available full-time or part-time.

PROGRAM: Food Processing Technology
LOCATION: Kensington Campus
LENGTH: 3 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12, or acceptable equivalent, with a minimum standing of 60% in science, physics, chemistry, or biology, mathematics and English.

GBC CODE: F1
FEE: $260 per year

GENERAL INFORMATION:

This is a co-operative program designed to prepare the students for a career in any one of the many branches of the food processing industry. Thorough schooling in the applied and biological sciences and their application to the processing of food will be offered. Concentrated instruction related to a specific branch of the food insutry will be given in the final year.

During the three years, the student will spend 6 semesters of 15 weeks each in academic studies of the College and two semesters of 20 weeks each in practical work; during this later period, he will be employed in the industry and will be paid at the prevailing rate.

Opportunities may be found in research and development, quality control, marketing, plant sanitation, production supervision, marketing technical sales and service, government inspection and regulatory services.

PROGRAM CONTENTS:

FIRST YEAR Semester I		Hours per week
CHEM 102	General Chemistry	6
PHYS 104	Applied Physics	6
MATH 100	Mathematics	4
BIO 100	Biology	6
EC 100	Economics	3
FT 100	Food Industry	2
ENG 100	Lang. & Communication	3
		30

FIRST YEAR Semester II		Hours per week
CHEM 100	Chemistry	6
PHYS 104	Applied Physics	6
MATH 100	Mathematics	4
PHY 100	Physiology	6
EC 100	Economics	3
FT 100	Food Industry	2
ENG 100	Lang. & Communication	3
		30

SECOND YEAR Semester III		
CHEM 202	Organic Chemistry	6
FT 200	Food Engineering	3
FT 201	Food Processing	6
BIO 200	Food Microbiology	6
MATH 200	Mathematics	4
ENG 210	Communication in Industry	3
	Instrumentation	3
		31

SECOND YEAR Semester IV		
CHEM 202	Organic Chemistry	6
FT 200	Food Engineering	3
FT 201	Food Processing	6
BIO 200	Food Microbiology	6
MATH 200	Mathematics	4
	Industrial Relations	3
	Instrumentation	3
		31

PROGRAM: Food Processing Technology - Cont'd

PROGRAM CONTENTS:

THIRD YEAR	Semester V	Hours per week
CHEM 300	Food Chemistry	3
CHEM 302	Food Analysis	9
SAN 300	Sanitation & Pollution	2
TF 300	Control & Evaluation of Food Quality	2
MATH 316	Elementary Statistics	2
FT 301	Food Processing Option	9
		3
		30

THIRD YEAR	Semester VI	Hours per week
CHEM 300	Food Chemistry	3
CHEM 302	Food Analysis	9
SAN 300	Sanitation & Pollution	2
TF 300	Control & Evaluation of Food Quality	2
MATH 316	Elementary Statistics	2
FT 301	Food Processing Option	9
		3
		30

PROGRAM: Dietary Services Administration
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12, with a minimum of 60% in science.

GBC CODE: F2
FEE: $260 per year

GENERAL INFORMATION:

Successful graduates of this course will find a demand for their services in the food service department at public and private institutions as assistants to administrative and therapeutic dieticians or food service managers.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
HIND 102	Dietary Orientation	1
FP 100	Food Preparation I	8
FT 100	Food Products & Standards	4
SAN 100	Sanitation & Hygiene	3
ENG 110	Lang.& Communication I	2
MATH 110	Business Math I	3
HIND 105	Accounting I	3
HIND 104	Menu Planning	3
		27

FIRST YEAR	Semester II	Hours per week
NUT 100	Nutrition	3
FP 100	Food Preparation II	8
HIND 103	Food Cost Control	4
EC 210	Economics	3
ENG 111	Lang.& CommunicationII	2
BIO 101	Microbiology	5
HIND 105	Accounting II	3
		28

SECOND YEAR

This second year is now established on a co-operative basis with several health care facilities in Toronto.

Semester III		
FP 204	Food Preparation III	6
PHY 200	Physiology	5
HIND 204	Human Relations	2
HIND 202	Banquet Management	3
HIND 203	Food Facilities Layout	3
DR 156	Blueprint Reading & Drafting	1
HIND 205	Dining Room Service	6
HIND 207	Food Law	2
HIND 208	Work Experience	8
		28

Semester IV		
HIND 210	Personnel Management	3
HIND 211	Payroll Analysis & Control	1
CHEM 201	Biochemistry	5
NUT 200	Therapeutic Nutrition	3
FP 203	Convenience Foods	2
HIND 216	Management Practice	16
		30

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Food Administration
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or journeyman chef certificate with 2nd class honours.

GBC CODE: F3
FEE: $260 per year

GENERAL INFORMATION:

This course is designed to fill the growing need for men and women who are trained to administer food production on a large scale. Students are taught all aspects of food production, from purchasing to service, and, in addition, are schooled in modern methods of management.

Successful graduates of this course may look forward to well paid positions in restaurants, institutions, and industrial catering companies at the midmanagement levels.

PROGRAM CONTENTS:

FIRST YEAR Semester I			Hours per week
HIND	101	Food Orientation	1
FP	100	Food Preparation I	8
FT	100	Food Products & Standards	4
SAN	100	Sanitation & Hygiene	3
ENG	110	Lang. & Communication I	2
MATH	110	Business Math I	3
HIND	105	Accounting I	3
HIND	104	Menu Planning	3
			27

FIRST YEAR Semester II			Hours per week
NUT	100	Nutrition	3
FP	100	Food Preparation II	8
HIND	103	Food Cost Control	4
EC	210	Economics	3
ENG	111	Lang. & Communication	2
HIND	108	Beverage Prep. & Service	3
HIND	105	Accounting II	3
HIND	109	Automatic Food Merchandising	2
			28

SECOND YEAR

This second year program is now established on a co-operative basis with the food, beverage and administration departments of a large mid-city food complex.

Semester III			
FP	204	Food Preparation III	6
HIND	209	Restaurant Accounting	3
HIND	204	Human Relations	2
HIND	202	Banquet Management	3
HIND	203	Food Facilities Layout	3
DR	156	Blueprint Reading & Drafting	1
HIND	205	Dining Room Service	6
HIND	207	Food Law	2
HIND	208	Work Experience	8
			26

Semester IV			
HIND	210	Personnel Management	3
HIND	211	Payroll Analysis & Control	1
HIND	212	Advertising & Sales Promotion	3
HIND	213	Belcap	3
FP	203	Convenience Foods	2
HIND	215	Beverage Cost Control	2
HIND	216	Management Practice	16
			30

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Hotel-Motel Administration
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GBC CODE: F4
FEE: $260 per year

GENERAL INFORMATION:

The growing hotel and motel industry offers a variety of equally interesting career opportunities. Many, possibly the majority, of the jobs in the industry involve almost constant contact with the public, and require the sort of personality that can readily adapt to the often demanding situations which may arise. However, there are opportunities as well for the person with an analytical turn of mind. The course delves into all aspects of hotel and motel management, and thus permits the student to become acquainted with the hotel and motel field as a whole, so that he can, upon graduation, decide in which particular area he wants to specialize. Graduates of the course will be able to find employment in the front office, sales, catering, beverage, accounting, personnel, and other departments of the hotels and motels, as well as in related areas such as the institutional and restaurant catering field.

PROGRAM CONTENTS:

FIRST YEAR Semester I			Hours per week
HIND	100	Hotel Orientation	1
FP	100	Food Preparation I	8
FT	100	Food Products & Standards	4
SAN	100	Sanitation & Hygiene	3
ENG	110	Lang. & Communication I	2
MATH	110	Business Math I	3
HIND	105	Accounting I	3
HIND	104	Menu Planning	3
			27

FIRST YEAR Semester II			Hours per week
HIND	106	Front Office I	3
FP	100	Food Preparation II	8
HIND	103	Food Cost Control	4
EC	210	Economics	3
ENG	110	Lang.& Communication	2
HIND	108	Beverage Prep. & Service	3
HIND	105	Accounting II	3
HIND	109	Automatic Food Merchandising	2
			28

PROGRAM: Hotel-Motel Administration - Cont'd.

PROGRAM CONTENTS:

SECOND YEAR

This second year is now established on a co-operative basis with two well-known Toronto hotels.

	Semester III	Hours per week
HIND 106	Front Office II	5
HIND 200	Hotel Accounting	3
HIND 201	Hotel Housekeeping	3
HIND 204	Human Relations	2
HIND 202	Banquet Management	3
HIND 203	Food Facilities Layout	3
DR 156	Blueprint Reading &	
HIND 205	Dining Room Service	6
HIND 208	Work Experience	8
HIND 206	Hotel Law	2
		28

	Semester IV	Hours per week
HIND 210	Personnel Management	3
HIND 211	Payroll Analysis & Control	1
HIND 212	Advertising & Sales Promotion	3
HIND 213	Belcap	3
HIND 214	Hotel Interior Design	2
HIND 215	Beverage Cost Control	2
HIND 216	Management Practice	16
		30

PROGRAM: Bakery Technician — GBC CODE: F40
LOCATION: Kensington Campus — FEE: $260
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Grade 12, preferably with a knowledge of the baking industry or a science background; honours apprenticeship students; or acceptable equivalent.

GENERAL INFORMATION:

This program is designed to give students a broad, deep knowledge of the various techniques employed in the Canadian baking industry.

1. The physical and chemical aspects of the baking processes will be stressed, as well as their application in production baking.

*2. The courses as described in this program are available as part-time courses, with credits applicable to final certification. Thus, students employed in the baking industry can obtain certification through the day release part-time program.

* SPECIAL NOTE: Full-time employees in the baking industry may attend any one of the above programs on recommendation of their employers. Each subject is offered on the basis of one day per week, in order to encourage this type of participation.

PROGRAM CONTENTS:

SEMESTER I		Hours per week
BK 134	Bread Making Technology	6
BK 135	Cake Making Technology	6
BK 136	Cookie & Biscuit Technology	6
BK 137	Candy & Chocolate Technology	6
BK 138	Decorating Techniques & Design	6
		30

SEMESTER II		
SAN 130	Sanitation, Hygiene & Microbiology Techniques	6
TF 130	Quality Control & Product Development	6
BK 139	Bakery Engineering & Equipment	6
FT 130	Cereal Chemistry & Technology	6
BK 140	Bakery Management	6
		30

PROGRAM: Baking Pre-Employment
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent.

GBC CODE: F41
OMRP CODE: 712
FEE: $5.00 per week

GENERAL INFORMATION:

To prepare students, who do not meet apprenticeship prerequisites, for a career in the Canadian baking industry, with special reference to the in-store bakery and craft-style bakery.

PROGRAM CONTENTS:

BASIC - Semester I

BK	15	Bread Craft
BK	17	Cake Craft
BK	18	Cookie Craft
BK	16	Pastry Craft
BK	10	Theory Baking
BK	11	Related Theory
BK	140	Baking Management
BK	13	Nutrition
MATH	11	Mathematics
ENG	11	English

ADVANCED - Semester II

BK	25	Bread Craft
BK	26	Cake Craft
BK	27	Pastry Craft
BK	19	Decorating Craft
BK	21	Related Theory
BK	20	Theory Baking
BK	140	Baking Management
MATH	21	Mathematics
ENG	21	English

PROGRAM: Chef Training Pre-Employment
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

GBC CODE: F42
FEE: $200

GENERAL INFORMATION:

Graduates of this program will find unlimited opportunities for gainful employment in all areas of the food service industry, including hotel kitchens, restaurants, institutions, commercial and industrial catering organizations. Evening banquets are considered an essential part of this program. Candidates must be prepared to complete a minimum of 30 banquet hours during the program.

PROGRAM CONTENTS:

SEMESTER I			Hours per week
TF	131	Theory of Food	5
BK	130	Theory of Baking	1
MC	130	Theory of Meat	1
HIND	130	Kitchen Management	2
FP	130	Quantity Food Preparation Practical	12
BK	132	Practical Baking	3
MC	132	Practical Meat Cutting	1
MATH	135	Business Mathematics	2
ENG	141	Language & Communication	2
NUT	131	Nutrition	1
CONV	10	Convenience Food	1
			31

SEMESTER II

TF	131	Theory of Food	3
BK	130	Theory of Baking	2
HIND	130	Kitchen Management	4
FP	131	Advanced Quantity Foods	12
BK	133	Advanced Baking	3
MC	132	Advanced Meat Cutting	1
MATH	135	Business Mathematics	2
ENG	141	Language & Communication	2
MC	130	Theory of Meat	1
CONV	20	Convenience Food	1
			31

PROGRAM: Cook Training
LOCATION: Kensington Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: F43
OMRP CODE: 614
FEE: $5.00 per week

GENERAL INFORMATION:

This program is designed to prepare men and women for a career in professional cooking. Graduates are encouraged to enter the apprentice chef training program and complete the requirements for the provincial certificate of qualification as a journeyman chef. Evening banquets are considered an essential part of the program. Candidates must be prepared to complete a minimum of 30 banquet hours during the program.

PROGRAM CONTENTS:

TF	131	Theory of Food
BK	131	Theory of Baking
MC	130	Theory of Meat
HIND	130	Kitchen Management
FP	130	Quantity Food Preparation Practical
BK	132	Practical Baking
MC	131	Practical Meat Cutting
MATH	135	Business Mathematics
ENG	141	Language & Communication
NUT	131	Nutrition
CONV	10	Convenience Food

PROGRAM: Retail Meat Cutting
LOCATION: Kensington Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10; high standard of personal hygiene and willingness to take a complete medical examination, which is administered by the Health Centre at the College

GBC CODE: F44
OMRP CODE: 642
FEE: $5.00 per week

GENERAL INFORMATION:

Professional meat cutters are employed by the following organizations: independent meat stores, chain store meat departments, hotel and restaurant portion control supply houses, home freezer supply houses and catering organizations. Graduates of this course, because of their skill and immediate value to an employer, will experience little difficulty in finding an employer of their choice.

PROGRAM CONTENTS:

MC	133	Practical Meat Cutting
MC	134	Trade Theory
HIND	136	Business Procedure
SAN	131	Sanitation & Hygiene
NUT	130	Foods & Nutrition
MATH	135	Business Mathematics
ENG	141	Language & Communication

PROGRAM: Dining Room Service
LOCATION: Kensington Campus
LENGTH: 10 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 preferred; keen interest; pleasing personality attractive personal appearance.

GBC CODE: F70
OMRP CODE: 420
FEE: $5.00 per week

GENERAL INFORMATION:

Graduates have ample opportunity to select positions from a variety of establishments in the food service industry. Many hotel dining rooms, clubs, railway dining cars, and motels employ only trained personnel or graduates of recognized programs. Many graduates have entered the industry directly as junior managers with restaurant chains; others find employment in institutions which permit advancement to the positions of captain, maitre d'hotel, assistant manager, manager, hostess or manageress. Evening banquet service is considered an essential part of the practical training; candidates must be prepared to complete a minimum of 30 banquet hours during the program.

PROGRAM CONTENTS:

HIND	132	Theory of Dining Room Service
HIND	133	Table Service
TF	133	Theory of Food
HIND	134	French Service
HIND	135	Beverage Service

PROGRAM: Chef Refresher — GBC CODE: F71
LOCATION: Kensington Campus — OMRP CODE: 612
LENGTH: 8 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: A person who has been employed in the food industry as a cook, with little or no formal cooking training. Grade 10 or equivalent preferred.

GENERAL INFORMATION:

This course is designed to provide the formal chef training that is so often lacking in those individuals who have grown into their jobs. Upon successful completion, the student should be able to handle a more responsible job in the kitchen.

PROGRAM CONTENTS:

TF	131	Theory of Food
BK	131	Theory of Baking
MC	130	Theory of Meat
HIND	130	Kitchen Management
FP	130	Quantity Food Preparation Practical
BK	132	Practical Baking
MC	131	Practical Meat Cutting
NUT	131	Nutrition
SAN	132	Sanitation, Hygiene & Safety
CONV	10	Convenience Food
MATH	11	Mathematics

PROGRAM: Food Service Hostess — GBC CODE: F72
LOCATION: Kensington Campus — OMRP CODE: 716
LENGTH: 5 Weeks — FEE: $5.00 per week
CERTIFICATION: Certificate
PREREQUISITE: Presentable appearance, desire to meet the public, pleasant personality, ability to communication in the English language.

GENERAL INFORMATION:

The program is designed to produce a hostess capable of providing satisfactory service to customers frequenting a fast food and family type restaurant.

PROGRAM CONTENTS:

HIND	132	Theory Dining Room Service
HIND	133	Table Service
HIND	135	Beverage Service
SAN	11	Sanitation & Hygiene

PROGRAM: Fast Food Service Cooks — GBC CODE: F73
LOCATION: Kensington Campus — OMRP CODE: 715
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent preferred, good health, and ability to operate at the speed requirement of this type of fast service.

GENERAL INFORMATION:

This program is designed to produce a cook capable of producing needed food products from a partially prepared state to the requirement for service in a fast food and family type restaurant.

PROGRAM CONTENTS:

TF	131	Theory of Food
HIND	103	Food Cost Analysis & Control
FP	100	Food Preparation (Basic)
SAN	132	Sanitation, Hygiene & Safety

PROGRAM: Ship's Cooks — GBC CODE: F74
LOCATION: Kensington Campus — FEE: $120.00
LENGTH: 24 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent, presently employed as cook I, Cook II, porter or night cook on Great Lakes carrier ships.

GENERAL INFORMATION:

This program is designed to provide the formal chef training that is so often lacking in those individuals who have grown into their jobs. Upon successful completion, the student should be able to fulfil his ship-board duties in a more skilful manner.

PROGRAM CONTENTS:

TF	131	Theory of Food
FP	130	Quantity Food Preparation (Practical)
BK	131	Theory Baking
BK	132	Practical Baking
MC	130	Theory of Meat
MC	131	Practical Meat Cutting
HIND	103	Food Cost Analysis & Control
SAN	132	Sanitation, Hygiene & Safety
NUT	131	Nutrition

PROGRAM: Bartending
LOCATION: Kensington Campus
LENGTH: 15 Weeks (bartending)
5 Weeks (bar management)
GBC CODE: F75
OMRP CODE: 6123-110
FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or mature student; no apparent physical defects or speech impediments; neat and clean appearance; pleasant and outgoing personality

GENERAL INFORMATION:

Bartending: to train men and women as bartenders (stool & service) for licensed establishments in the food and hospitality industry.
Bar Management: to train eligible candidates from the bartending course in the principles and practice of bar management.

PROGRAM CONTENT:

BAR100	Human Relations
BAR102	Ontario Liquor Law
BAR103	Mixology I
BAR104	Bar Management
BAR105	Accounting
BAR106	Beverage Theory
BAR107	Practical Experience

PROGRAM: Graphic Arts (Printing Technician)
LOCATION: Teraulay Campus
LENGTH: 3 years
GBC CODE: G1
FEES: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Grade 12; or grade 10 with success in high school printing course of grade 11 or 12; or industrial experience.

GENERAL INFORMATION:

The graphic arts industry plays an important role in the economy of the Province of Ontario and the City of Toronto in particular. It is experiencing continuous growth within the College environment: the instruction, equipment and facilities enable students to achieve up-to-date proficiency in all phases of operation. Those who enter the printing profession from these programs will be versatile enough to meet the challenge of technological change in the next decade.

All graphic arts printing technician technical courses are presented in a block system. Each technical course requires one block during the academic year. A block is 20 actual successive working days of 4 hours per day. Academic courses are presented simultaneously in a semester system totalling 10 hours per week. A semester consists of four blocks and concurrent academic work.

PROGRAM CONTENTS:

FIRST YEAR	Semesters I & II
GR100	Layout, Design, Typography
GR101	Hot Metal Composition
GR105	Photomechanical Reproduction
GR110	Film Imposition & Printing Surface Preparation
GR114	Machine Printing (Letterpress)
GR115	Machine Printing (Basic Offset)
GR116	Machine Printing (Offset)
GR125	Bindery
PHYS105	Physics (1st semester only)
CHEM105	Chemistry (2nd semester only)
MATH105	Mathematics
ENG100	Language & Communication

NOTE: Students must either type or be prepared to take a 20-hour lumisonic typing course in the 1st year.

PROGRAM: Graphic Arts (Printing Technician) (Continued)

SECOND YEAR Semesters III & IV

GR202	Photocomposition (including tape perforating keyboards)
GR205	Photomechanical Reproduction
GR210	Film Imposition & Printing Surface Preparation
GR214	Machine Printing (Flexo)
GR215	Machine Printing (Rotogravure)
GR216	Machine Printing (Offset)
GR217	Machine Printing (2 Color Offset)
GR225	Bindery
GR220	Quality Control
ELTC214	Electronics
MATH205	Mathematics
ENG200	Language & Communication

THIRD YEAR/TECHNICAL OPTIONS

Semesters V & VI

The student may select one Major area and one Minor area for technical specialization from the list following:

1. Type Composition (Hot and Cold)
2. Photomechanical Reproduction, Film Imposition and Printing Surface Preparation.
3. Machine Printing (two-colour offset, rotogravure, flexo, die cutting and embossing)
4. Binding and Finishing
5. Quality Control and Statistics

Of the eight technical blocks in third year, six will be in the area of major specialization and two in the area of minor specialization: all will be at the GR300 level. A major technical report is required.

In addition, related studies in one or more of the following:

Humanities (including studies of the trade union movement) Industrial Psychology and Personnel Relations, Science, Electronics and Business Administration, using various approaches.

PROGRAM: Graphic Design Technician GBC CODE: G2
LOCATION: College Street Campus FEES: $260 per year
LENGTH: 2 years (optional 3rd year)
CERTIFICATION: Diploma
PREREQUISITE: Grade 12 or equivalent; mature students over 19 years of age may be accepted with lower academic qualifications. All must submit a portfolio of 5 to 10 work samples before being approved.

GENERAL INFORMATION:

Metropolitan Toronto is Canada's largest centre for opportunities in advertising art and graphic design. For over five years we have been placing a very high percentage of graduates in studios, both large and small, in the Toronto area. The opportunity exists for students to develop a complete portfolio of sample work, from design sketches to finished art to printed pieces, as they would when on the job: this is made possible, because the department possesses the largest technical printing training facilities in Canada.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
GD100	Foundation Drawing	6
GD101	Life Drawing	4
GD102	Alphabet-lettering	3
GD103	Foundation Design	6
GD104	Foundation Colour	2
GD105	Foundation Techniques (ROM)	3
GD106	Foundation Mechanicals	4
GD107	Foundation History of Art	2
		30

Semester II

GD100	Foundation Drawing	3
GD101	Life Drawing	7
GD102	Alphabet Lettering	4
GD103	Foundation Design	6
GD105	Foundation Techniques (ROM)	4
GD106	Foundation Mechanicals	4
GD107	Foundation History of Art	2
		30

PROGRAM: Graphic Design Technician (Continued)

SECOND YEAR	Semesters III & IV	Hours per week
GD201	Illustration	3
GD202	Abstract Design	3
GD203	Graphic Design	3
GD204	Printmaking (Screen)	3
GD205	Graphic Techniques	3
GD206	Graphic Mechanicals	4
GD207	Historical Research	2
GD208	Packaging Mechanicals	3
GD209	Life Painting & Drawing	3
GD210	Packaging Design	3
		30

PROGRAM: Screen Printing
LOCATION: Teraulay Campus
LENGTH: 40 weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent; mature students with antitude as assessed by the instructor may be accepted with lower academic standing.

GBC CODE: G40
OMRP CODE: 730
FEES: $5 per week

GENERAL INFORMATION:

Screen printing is a rapidly growing segment of the specialized printing industries. Plastic, glass and metal surfaces; packaging, textiles, and wallpapers; signs and advertising posters and printed circuits are all produced by this process. Those with artistic and mechanical antitude do particularly well at this work.

PROGRAM CONTENTS:

Semesters I & II

SP126	Basic Principles of Layout, Design & Typography
SP127	Photomechanical Reproduction (Line, Halftone, Basic Process Color-reproduction)
SP128	Film Imposition, Stencil Cutting and Screen Preparation
SP129	Manual and Mechanized Screen Printing Paper and Board
SP130	Mechanized Screen Printing (Other Substrates such as Plastics, glass, wood, metal, cloth, self adhesive films)
MATH134	Mathematics
ENG130	Language & Communication
PHYS139	Applied Science: (Color, Color Viewing, Substractive-Process, Optical-Laws, Fluorescence, Paper, Ink, Solvent, Coatings, Plastics)

PROGRAM: Offset Printing
LOCATION: Teraulay Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or acceptable equivalent of industrial experience.

GBC CODE: G42
OMRP CODE: 810
FEES: $5 per week

GENERAL INFORMATION:

This short technical program is designed to train an offset pressman in the operation of various types of small offset presses likely to be encountered in captive plants or small printing shops. Understanding the fundamentals of typesetting, line and halftone reproduction, printing surface preparation, binding and finishing, as well as press operation, will enable the graduate of this program to obtain optimum results from the equipment available at an employer's print shop.

PROGRAM CONTENTS:

Semesters I & II

GR130	Copy Preparation
GR134	Graphic Arts Camera Operation
GR136	Stripping & Plate Making
GR138	Machine Printing (Letter-Press)
GR140	Machine Printing (Offset)
GR142	Binding and Finishing
MATH134	Mathematics
PHYS139	Physics and Chemistry

PROGRAM: Commercial Art
LOCATION: College Street Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent; mature students over 19 years of age may be accepted with lower academic standing; all must either submit a portfolio of 5 to 10 samples before acceptance or pass an entrance test.

GBC CODE: G43
OMRP CODE: 613
FEES: $5 per week

GENERAL INFORMATION:

A large number of graduates from this course have been placed as junior artists and designers in many of Metropolitan Toronto's commercial art studios, advertising agencies, company advertising departments, printing specialty houses and departmental stores.

PROGRAM CONTENTS:

Semester I

GD100	Foundation Drawing
GD101	Life Drawing
GD102	Alphabet Lettering
GD103	Foundation Design
GD104	Foundation Color
GD105	Foundation Techniques (ROM)
GD106	Foundation Mechanical
GD107	Foundation History of Art

Semester II

GD100	Foundation Drawing
GD101	Life Drawing
GD102	Alphabet Lettering
GD103	Foundation Design
GD105	Foundation Techniques (ROM)
GD106	Foundation Mechanicals
GD107	Foundation History of Art

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Signwriting
LOCATION: Teraulay Campus
LENGTH: 40 Weeks
CBC CODE: G46
OMRP CODE: 633
FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or a combination of education and experience considered equivalent by the registrar.

GENERAL INFORMATION:

Many large department stores, manufacturing companies, advertising agencies and retail outlets maintain a staff of signwriters to produce new signs, posters, and advertising displays.

Although the competition in this vocation is vigorous, there is ample opportunity for those who show creative ability and commercial effectiveness in their work.

PROGRAM CONTENTS:

Semesters I & II

SIGN130 Basic Signwriting and Introduction to Screen Process Printing

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Offset Printing for Letterpressman
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CBC CODE: G70
OMRP CODE: 844
FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Sufficient experience as a letter-press journeyman

GENERAL INFORMATION:

This one-semester program is designed to meet the specific needs of the graphic arts industry to retrain letterpress journeymen for offset pressmanship and offset platemaking. Although this program is short, it is very intensive and provides adequate practical experience on a variety of medium- and large-size single color offset presses. Basic platemaking procedures are included.

PROGRAM CONTENTS:

GR115 Machine Printing (Basic Offset)
GR116 Machine Printing (Offset)
GR216 Machine Printing (Offset)
GR218 Machine Printing (Process Color)

Related Theory

PROGRAM: Photo Composition and Paste-Up Assembly for Typographers
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CBC CODE: G72
OMRP CODE: 704
FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Journeyman status as a typographer, an antitude for careful accurate handwork, and the ability to visualize the finished product at the paste-up stage: mechanical aptitude and ability to learn basic binary logic, as measured by IBM data processing test.

GENERAL INFORMATION:

A survey of the printing industry by the Toronto Typographical Union indicates that these are areas of increasing demand, as the industry converts to new techniques in composition and preparation methods.

PROGRAM CONTENTS:

TYP152 Typing (including Lumisonic Typing)
GR202 Tape-Keyboarding and Tape-Processing
GR208 Theory of Photo-Typesetting Equipment
GR204 Paste-Up Assembly

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM: Photo Reproduction for Typographers
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Journeyman typographer and aptitude for camera work

GBC CODE: G73
OMRP CODE: 702
FEES: $5 per week

GENERAL INFORMATION:

This is one of the main areas where there is a growing demand in the printing industry. Graduates are trained black and white, line and half-tone process camera men.

PROGRAM CONTENTS:

GR105	Photo Mechanical Reproduction (Basic black and white)
GR205	Photo Mechanical Reproduction (Basic half-tone)
GR305	Photo Reproduction (Advanced)

PROGRAM: Film Imposition & Printing Surface Preparation for Typographers
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Journeyman typographer with aptitude for accurate, careful hand work and the ability to visualize the finished product at the film stripping stage.

GBC CODE: G74
OMRP CODE: 703
FEES: $5 per week

GENERAL INFORMATION:

This is one of the principal areas where there will be an increasing demand in the printing industry, as it converts from letterpress to offset press techniques. Graduates are trained in film-stripping and platemaking, including process color work.

PROGRAM CONTENTS:

GR110	Film Imposition & Printing Surface Preparation (Basic black and white)
GR210	Film Imposition & Printing Surface Preparation
GR310	Film Imposition & Color Printing Surface Preparation (Process color)

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM PENDING: Health & Fitness Instructor
LOCATION: Casa Loma Campus
LENGTH: 2 Years (3rd year optional)
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

FEES: $260 per year

GENERAL INFORMATION:

Health and Fitness Instructors provide the qualified personnel required to supervise the facilities offered by fitness agencies. This program pays special attention to physical testing procedures and the designing of exercise programs needed to produce the type of conditioning desired. The final selection of courses was based on the requirements of the fitness agencies.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week: Lecture	Lab
FIT100A	Introduction to Fitness Testing	4	6
FIT101A	Introduction to Anatomy	3	2
FIT102	Psychology of Exercise	5	
ENG100	Language & Communication	2	
HEAL100	Health Studies	3	2
AQUA100	Aquatic Skill Developments	1	3
		18	13

Total 31 hours

FIRST YEAR	Semester II		
FIT100B	Introduction to Fitness Testing	4	6
FIT101B	Introduction to Anatomy	3	2
FIT103	Physiology	4	2
ENG100	Language & Communication	2	
HEAL101	Nutrition and Physical Performance	4	
AQUA101	Aquatic Programming	3	1
		20	11

Total 31 hours

SECOND YEAR	Semester I		
FIT200A	Clinical Internship	4	9
FIT204A	Physiology	4	2
HEAL200	Comparative Programmes in Physical Fitness and Health	3	2
HEAL201	Applied Exercise Therapy	4	2
		15	15

Total 30 hours

PROGRAM PENDING: Health & Fitness Instructor (Continued)

SECOND YEAR	Semester II	Hours per week Lecture	Lab
FIT200B	Clinical Internship	4	9
FIT204B	Physiology	4	2
FIT205	Business Administration	4	
HEAL202	Personality and Motivation in Physical Activity	5	
HEAL	Research Projects	3	
		20	11
		Total 30 hours	

THIRD YEAR	Semester I & II (Optional)		
FIT300	Clinical Management	4	6
FIT302	Advanced Fitness Programming		10
FIT304	Advanced Physiology	5	
EDP100	Introduction to EDP	5	
		14	16
		Total 30 hours	

PROGRAM: Furniture Refinishing & Repair
LOCATION: Kensington Campus
LENGTH: 32 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent
GBC CODE: ST52
OMRP CODE: 622
FEES: $5 per week

GENERAL INFORMATION:

Through the project method, each student works at his own pace, performing the operations of furniture construction, cabinet making, and finishing; such is his essential preparation for progression into the field of restoring, repainting and refinishing of fine pieces of furniture. This 32-week program serves as an excellent basis for an industrial beginning.

PROGRAM CONTENTS:

FURN152 Woodwork
MATH134 Mathematics

PROGRAM: Furniture Upholstery & Repair
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Keen interest
GBC CODE: ST53
OMRP CODE: 623
FEES: $5 per week

GENERAL INFORMATION:

Repairing upholstered furniture and the complete reupholstery of fine furniture require a worker possessing abilities as a pattern maker, a cutter, a sewing machine operator, a seat maker, an arm maker, a back maker and a trimmer. Graduates of this program receive a sound background in all these areas, with the result that they can enter any phase of employment pertaining to the furniture upholstery industry.

PROGRAM CONTENTS:

FURN153 Furniture Upholstery

PROGRAM: Hairstyling for Barbers
LOCATION: Kensington Campus
LENGTH: 6 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Current barbering licence (Ontario); good health

GBC CODE: ST72
OMRP CODE: 724
FEES: $5 per week

GENERAL INFORMATION:

A man holding a certificate of qualification in barbering can learn the techniques necessary for originating and effecting styles for men, through the interpretation of the client's wants, so that a pleasant overall appearance is created.

PROGRAM CONTENTS:

STYL10	Styled Hair Cutting: Theory
STYL11	Styled Hair Cutting: Practice
STYL12	Blowing and Curling: Theory
STYL13	Blowing and Curling: Practice
STYL14	Permament Waving & Colouring

PROGRAM: Protection Services and Security
LOCATION: Teraulay Campus
LENGTH: 8 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent: minimum height of 5'8": must be fingerprinted to establish a clear record under the criminal code

GBC CODE: ST76
OMRP CODE: 687
FEES: $5 per week

GENERAL INFORMATION:

George Brown College offers the only program of this kind that allows students to take an integrated course of study in industrial, commercial, and warehousing security.

PROGRAM CONTENTS:

PROT141	Introduction to Security
PROT142	Operational procedures
PROT143	Emergencies: Precautions and actions
PROT144	Theft and Other Misdemeanours
PROT145	Powers, Limitations, Public Relations
PROT146	First Aid
ENG141	Language & Communication, Reporting

PROGRAM: Commercial Vehicle Driving
LOCATION: Kensington Campus
LENGTH: 3 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent; chauffeur's licence; physically strong.

GBC CODE: ST74
OMRP CODE: 802
FEES: $5 per week

GENERAL INFORMATION:

Students receive training in the safe operation of 5-ton standard commercial vehicles so necessary to enter the field of road transportation. To be eligible for this program applicants must possess a chauffeur's licence, an elementary education, and good health.

PROGRAM CONTENTS:

VEH10	Commercial Vehicle Operation

PROGRAM: Tractor Trailer Driving
LOCATION: Kensington Campus
LENGTH: 4 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Must have been employed as a driver of a standard commercial vehicle for not less than one year, in possession of a chauffeur's licence and able to pass a driving test.

GBC CODE: ST75
OMRP CODE: 1004

GENERAL INFORMATION:

With modern driving becoming involved and often hazardous, a scientific approach in this field provides drivers with current knowledge in the latest methods of safe and economical operation. A knowledge of air brakes, multi-range transmissions and tachometers will help drivers to maintain total control of the vehicle on the modern high speed highway.

PROGRAM CONTENTS:

VEH11	Tractor Trailer Driving

PROGRAM: Certified Building Custodian GBC CODE: ST73
LOCATION: Teraulay Campus OMRP CODE: 611
LENGTH: 14 Weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Good physical condition; ability to follow instructions in English

GENERAL INFORMATION:

This program will prepare students to satisfy the ever-increasing demands of properly trained personnel in the field of maintenance and care of office buildings, such as the Royal Trust Tower, Commerce Court, and the Toronto-Dominion Centre. Applicants must be physically capable of carrying out work routines, using hand tools or sophisticated floor and carpet machines.

PROGRAM CONTENTS:

ENG141	Language & Communication
MATH146	Mathematics
BCU141	Custodial Theory
BCU142	Custodial Practice

PROGRAM: Apartment Building Superintendent GBC CODE: ST77
LOCATION: Teraulay Campus OMRP CODE: 6130-122
LENGTH: 20 Weeks FEES: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent: preferably married couple, without children

GENERAL INFORMATION:

A mature person who has good health, a grade 8 education, and, preferably, a wife but no children, may apply for training to supervise apartment or office buildings in the areas of cleaning, heating, maintenance and general care of surroundings. This program will stress human relation skills and the phases of management necessary for everyday communication with tenants, employees and other supervisors or managers.

PROGRAM CONTENTS:

ENG141	Language & Communication
MATH146	Mathematics
ABS141	Theory
ABS142	Practice

PROGRAM PENDING: Furniture Arts Technology
LOCATION: Kensington Campus FEES: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Grade 12

GENERAL INFORMATION:

This program will prepare a student for employment in the areas of furniture finishing, cabinet making, and furniture upholstery. A graduate will understand furniture layout, construction, and assembly; this will enable him to step into supervisory, buying, or selling positions or to engage in the assessing and restoring of antiques.

PROGRAM CONTENTS:

FIRST YEAR	Semester I	Hours per week
	Cabinet and Chair Making	7
	Wood Machining	3
	Finishing	4
	Upholstery	10
	Materials	2
	Technical Drawing and Blueprint Reading	3
	Factory Organization	1
		30

FIRST YEAR	Semester II	
	Cabinet and Chair Making	6
	Wood Machining	4
	Finishing	4
	Upholstery	10
	Materials	1
	Technical Drawing	2
	Design	1
	Factory Organization	1
		30

SECOND YEAR	Semester III - (Woodwork Option)	
	Cabinet and Chair Making	16
	Wood Machining	8
	Materials	1
	Technical Drawing	2
	Design	2
	Factory Organization	1
		30

PROGRAM PENDING: Furniture Arts Technology (Continued)

PROGRAM CONTENTS:

SECOND YEAR	Semester III - (Upholstery Option)	Hours per week
	Upholstery (including Field Trips)	20
	Technical Drawing	2
	Design	2
	Factory Organization	1
	Upholstery Methods	2
	Materials	1
	Styles and Colour	2
		30

Semester IV - (Woodwork Option)

Cabinet and Chairmaking	16
Wood Machining	8
Materials	1
Technical Drawing	2
Design	2
Factory Organization	1
	30

Semester IV - (Finishing Option)

Finishing	22
Materials	1
Design	2
Factory Organization	2
Colour	4
	20

Semester IV - (Upholstery Option)

Upholstery (including Field Trips)	22
Small Business Management	2
Factory Organization	1
Costing	1
Re-cover Estimating	1
Antique Upholstered Furniture	2
Materials	1
	30

APPRENTICESHIP PROGRAMS

Apprenticeship is a systematic program of on-the-job learning along with related classroom instruction; this combination of practice and theory is designed to produce a fully-qualified tradesman, who is frequently referred to as a journeyman.

The apprentice earns while he learns. Depending on the trade, the length of the apprenticeship program varies from two to five year.

For further information about apprenticeship programs, please contact the Industrial Training Branch of the Ontario Ministry of Colleges and Universities, 400 University Avenue, Toronto, Ontario, M7A 1C2. Telephone (416) 965-4211.

The George Brown College is involved in apprenticeship programs for the following tradesmen:

	Educational Prerequisite	Total Length Of Program In Hours	College Classroom Time In Weeks
1. Air Conditioning & Refrigeration Worker	Equiv. Gr.10	*5 x 1800	# 8 - 7 - 7
2. Baker	Equiv. Gr. 8	2 x 2000	15 - 15
3. Barber	Equiv. Gr. 9	3 x 1500	18
4. Brick & Stone Mason	Equiv. Gr. 8	4 x 1600	8 - 7 - 7
5. Carpenter	Equiv. Gr.10	3844 hr. min. 7200 hr. max.	8 - 7 - 7
6. Cement Mason	Equiv. Gr. 8	3 x 2000	8 - 8
7. Chef	Equiv. Gr.10	3 x 2000	15 - 15
8. Electrician (Construction & Maintenance)	Equiv. Gr.10	5 x 1800	7 - 7 - 8
+9. Electronics Mechanic (Industrial Control)			8
10. Glazier & Metal Mechanic	Equiv. Gr.10	4 x 2000	7 - 7 - 8
11. Hairdresser	Equiv. Gr. 9	3 x 1500	8 - 8
12. Ironworker (17 years of age)	Equiv. Gr.10	3 x 2000	8 - 7 - 7
13. Lather	Equiv. Gr.10	3 x 1800	10 - 10
14. Machinist	Equiv. Gr.10	4 x 2000	8 - 7 - 7
15. Millwright	Equiv. Gr.10	4 x 2000	8 - 7 - 7
16. Painter & Decorator	Equiv. Gr.10	4 x 1800	8 - 7 - 7
17. Plasterer	Equiv. Gr. 8	4 x 1600	8 - 7 - 7
18. Plumber	Equiv. Gr.10	5 x 1800	8 - 7 - 7
19. Radio & TV Service Technician	Equiv. Gr.10	4 x 2000	18 - 18
20. Retail Meat Cutter	Equiv. Gr.10	2 x 2000	18
21. Sheet Metal Worker	Equiv. Gr.10	5 x 1800	8 - 7 - 7
22. Sprinkler & Fire Protection Installer	Equiv. Gr.10	5 x 2000	7 - 7 - 8
23. Steamfitter	Equiv. Gr.10	5 x 1800	8 - 7 - 7
24. Structural Steel Draftsman	Equiv. Gr.10	3 x 2000	8 - 7 - 7
25. Toolmaker	Equiv. Gr.10	4 x 2000	8 - 7 - 7
26. Watch Repairer	Equiv. Gr.10	3 x 1800	24 - 8

* Read: 5 periods of 1800 hours each period

\# Read: 8 weeks at the basic level, 7 weeks at the intermediate level, and 7 weeks at the advanced level

\+ All apprentices graduating from the electrician program (No. 8 above) may take this program (No. 9) on a voluntary basis; it is offered during the fifth 1800-hour period of the electrician's program.

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ACCOUNTING

ACC 100 / Introduction to Accounting I

Accounting cycle including columnar journals, subsidiary ledgers, work sheet, adjusting and closing entries. Financial statements. The voucher system and internal control. Cash and accounts receivable. Notes and interest. Valuation of inventories. Depreciation and depletion. Payroll Accounting.

ACC 101 / Introduction to Accounting II

Partnership accounting. Corporations: organization and operation; stock transactions: retained earnings and consolidations. Long-term liabilities. Accounting for investments. Departmentalization and control. Manufacturing accounting.

ACC 103 / Accounting in an E.D.P. Environment

Attention is given to the use of financial data by management in decision making. Additional topics include (a) data preparation requirements for input to an electronic system, (b) reports and other output from the system, (c) control problems arising from automation and procedures designed to minimize these problems, (d) techniques for auditing electronic systems.

ACC 105 / Accounting - General S.S.

An introductory course designed to familiarize the student with the basic fundamentals of double-entry bookkeeping up to the preparation of a trial balance.

ACC 106 / Accounting - Legal S.S.

This course covers the basic fundamentals of double-entry bookkeeping up to and including the preparation of a trial balance, and applies these principles to the bookkeeping needs of a legal form.

ACC 107 / Accounting - Medical S.S.

This course covers the basic fundamentals of double-entry bookkeeping up to and including the preparation of a trial balance and applies these principles to the bookkeeping needs of the medical profession.

ACC 200 / General Accounting I

The emphasis is on accounting from the point of view of management analysis and control. Topics include capital and debt structure of a limited company, analysis of financial statements and statements of sources and applications of funds, taxes and their influence on business decisions, budgeting and its use by management for planning and control.

ACCOUNTING - Cont'd.

ACC 201 / Accounting Systems

This course is designed to familiarize the student with (a) the information needs of management, (b) reports issued to management for decision making, (c) information systems for collection of data, and (d) the principles and philosophies involved in systems design and installation.

ACC 202 / Cost Accounting I

The aims of this course are (a) to teach the basic concepts and principles of cost accounting, (b) to teach the concepts of materials, labour and overhead as applied to cost accounting, (c) to develop cost accounting techniques to be applied to the solution of problems and case studies.

ACC 203 / General Accounting II

The aim of the course is to familiarize students with management accounting through the application of financial accounting. Topics include changes in working capital, statements of cash flows, break-evens, variables, analysis, measurements, ratios, short and long-term budgets, present value of cash flows and comparison of long range alternate plans, return on capital.

ACC 204 / Cost Accounting II

The aims of the course are (a) to develop and expand on the cost accounting principles introduced in ACC 202, (b) to develop costing techniques for budgeting control of materials, labour and overhead, (c) to teach the principles of process cost accounting and cost of production reports, (d) to instruct on the preparation of budgets; also cash flows, commercial expenses and forecast statements.

ACC 205 / Auditing and Taxation

Principles and practices of auditing, with particular emphasis on the understanding of a good system's design and the evaluation of internal control. Year-end verifications of assets and liabilities. Income Tax Act and its regulations. Preparation of individual and corporate tax returns. Taxation theory.

ADDICTION COUNSELLING

AD 100 / Field Practice

Field practice is an integral part of the course in affording students supervised clinical experience in a variety of settings. Field experience is considered an essential concomitant to the behavioural sciences.

ADDICTION COUNSELLING - Cont'd.

AD 101 / Human Growth and Behaviour

A sequential view of the process of human growth and personality development as a means to develop some understanding of the physical, socio-cultural and emotional aspects of development throughout the life span.

AD 102 / Group Process

This course has a two-fold aim. Students meet regularly in a group seminar, thus experiencing the dynamics of group interaction. The group process is used as interpretive behavioural material.

AD 103 / Social Services and Community Interaction

A study of the development and adaptation of institutions in response to community needs and pressures. Levels of responsibility: federal, provincial, municipal and private. The development of agencies providing education, health, welfare and other forms of service. Philosophies concerning the role of law in controlling alcohol and drug use, and the relevant legislation.

AD 104 / Pharmacology and Physiology

Pharmacology: The program should provide students with information and experience which will alter their attitudes and values toward the use of drugs in such a way that patients in turn will be influenced to improve their attitudes toward drugs through the natural interchange of throught occurring in treatment sessions. Physiology: Basic concepts of anatomy and physiology; how the body is involved with drugs and how it functions with and without their influence.

AD 105 / Historical Review of Man's Dependence on Chemicals

A study of mind altering drugs. Why man uses drugs; religions, medical endurance, enhancing and recreational. A study of the chemophilic age.

AD 106 / Theory, Methods & Practice of Therapy

A study of the therapeutic procedures and treatment philosophies related to personality patterns: Freudian theories of personality development will be used as a base from which to analyse the development of current treatment philosophies including those of Adler, Jung, Erikson, Rogers, Maslow, Glasser and others. Various techniques used in practice in individual and group therapy will be demonstrated.

AD 107 / Introductory Sociology

A survey of the field of sociology; culture and society, institutions, organizations, ecology and population, disorganization and deviant behaviour, ethnic communities and other aspects of group living.

AD 200 / Field Practice

Continuation of AD 100.

ADDICTION COUNSELLING - Cont'd.

AD 201 / Human Growth and Behaviour, Abnormal Development

A sequence of AD 101, the process here is on abnormal development and dysfunction.

AD 202 / Group Process

Continuation of AD 102.

AD 203 / Community Interaction

Continuation of AD 103.

AD 206 / Theory, Methods & Practice Of Therapy

A sequence to AD 106, with special emphasis on family therapy and counselling with small groups.

AD 207 / Sociology

Sociology of institutions. Special emphasis on the functions of the family as it is understood in various ethnic communities. The changing role of the family. The sociology of deviant behaviour.

AD 209 / Professional Development

The program should provide students with a practical knowledge about existing treatment programs and related techniques in order to make meaningful referrals. Legal aspects of counselling. Information on current research in addictions.

AIR CONDITIONING

AIR 100 / Refrigeration

Effect of heat; expansions of solids, liquids and gases, change of state, latent vs. sensible heat. Heat measurement; basic system components; cons-ruction and use of pressure - enthalpy diagram; interelationship of system components using P-H diagram. Types of compressors; types of evaporators; types of condensers; importance of head pressure control; air side and refrigerant side methods, system operating controls; system safety controls.

AIR 105 / Air Conditioning

Review of basic principles of physics pertaining to air conditioning; air and human comfort, factors affecting comfort of human beings. Use of psychrometric chart. Effects of external and internal shading devices. Basic heating and cooling load calculations by various methods and for various types of structure. Principles of distribution system design for various types of residential application. Introduction to ventilation and use of the equal friction chart.

AIR CONDITIONING - Cont'd.

AIR 107 / Hydronic Heating

Characteristics of heat, body comfort, and construction materials. Heat loss calculations by I.B.R. "Detailed" and "Modern" methods. Types of hydronic systems and component characteristics. Design of systems.

AIR 108 / Controls

Use of instruments used in the operation and testing of heating, cooling and air conditioning systems.

AIR 109 / Electrical

Fundamentals of electricity as applied to heating, cooling and air conditioning systems.

AIR 200 / Refrigeration

Use of manufacturers data to select cooling towers and related equipment. Study of unitary, commercial industrial equipment, heat pumps. Use of psychrometrics chart in the selection of cooling coils. Refrigeration piping practice, sizing of refrigeration piping practice, sizing of refrigeration piping for allowable pressure drop and oil return to the compressor. Continuation of laboratory work of first year in system construction and analysis, testing, operating reports.

AIR 203 / Air Conditioning System and Equipment

Heating and cooling load calculations. Use of psychrometric chart. Air quantities for cooling requirements; effect of storage zoning, and pendulum effect, equipment selection. Central station: chillers, coils, heating and cooling, fans, refrigeration, unitary equipment. Water and air cooled rooftop units. Split systems. High pressure dual duct and induction systems: noise and vibration control.

AIR 205 / Estimating

Take-off of mechanical working drawings for duct work, piping layouts and machine room layout. Bill of materials and costing for air conditioning of a commercial building and preparation of sales proposal.

AIR 210 / Automatic Controls

Electric control circuits: two wire control circuits, three wire control circuits, floating and proportional control circuits. Electronic control circuits, electronic control units, and pneumatic control units. Commercial control systems: zone control for heating, control of unit heaters and ventilators, control of commercial vented fan heating and cooling systems, control of peripheral air conditioning units.

ANATOMY (MEDICAL SECRETARIAL SCIENCE)

ANAT 100 / Anatomy and Physiology

Structure and function of the human body with reference to the abnormal, with laboratory work.

ANAT 101 / Medical Terminology

Spelling and meaning of medical terms relating to normal and abnormal, with practice.

ARCHITECTURAL TECHNOLOGY

ARCH 100 / Materials and Methods

The manufacture and use of cement, steel, brick, clay, wood and other building products.

ARCH 200 / Materials and Methods

Advanced methods and applications of building materials and products.

APPAREL TECHNOLOGY

AT 151

Some mechanics of sewing machines; repairs, purchasing; variations; efficient use of, etc.

AT 161

Techniques for vestibule training of production employees; selection, orientation, etc.

AT 162

Applying production standards and establishing wage rates, incentives, etc.

AT 171

Human relations as practiced in the efficient apparel plant and workroom; division of work and work load; scheduling, etc.

AT 172

Labor-management relations: unions, Provincial Industrial Standards Act, minimum wages, piece work, etc.

AT 371

How to interview, hire, fire, promote employees in fashion environment; handling temperamental artistic types in workroom, fashion shows.

BUSINESS & COMMERCE

BUS 100 / Business Organization

This subject covers primarily areas of business not otherwise covered in the business administration program. Contemporary business issues are analyzed to indicate the relevance of theories and to prepare the student for the business world. The Canadian business scene is highlighted in terms of content, personalities, corporations and institutions. Students learn the generalists' multidisciplinary approach.

BUS 101 / Human Relations

An introduction to the fundamental principles of human relations; an analysis of the general nature of man as viewed from various thinkers, sciences and disciplines such as philosophy, psychology, economics, political science, theology, sociology, music, poetry, art, modern business management theories, etc.; an elementary examination of such topics as: Who am I? (self-awareness); effective communications; effective listening. Students are encouraged to read, research books, periodicals, learning-experiences and to develop a deeper appreciation that all knowledge is potentially valuable as an insight into human relations and human behaviour.

BUS 104 / Government Administration

An introduction to the organization and functions of municipal government in Ontario, with special emphasis on the City of Toronto and the Metropolitan Toronto Corporation. The courses will analyse both the political and bureaucratic structures of civic government, with some reference to changing urban politics and their ongoing effect on municipal policy and administration.

BUS 105 / Inventory Control I

Inventory goals, classificiations, physical stock control, control techniques, when and how much to order.

BUS 107 / Small Business Management

When managing your own business you have the opportunity to be independent, and to obtain financial rewards from your own initiative and motivation. Learning basic management methods as these relat to the smaller business will assist you toward success.

BUS 117 / Warehousing

Modern warehousing, functions, types: public, private; equipment, costs, mechanization and automation, principles of merchandise location.

BUS 118 / Purchasing

Analysis and application of methods of value-conscious buying by the corporate and institutional buyer. Quality, quantity, make or buy, sources of supply, price, flow of information.

BUSINESS & COMMERCE - Cont'd.

BUS 119 / Contemporary Business Issues

Canadian and international issues in the worlds of finance, economics, government, commerce and industry are discussed in seminar-style classes. Literature sources include the Financial Post, Globe and Mail Report on Business, Financial Times, Fortune, The Economist, Time and Business Week.

BUS 120 / Traffic I

Different modes of transportation: air, sea, rail, truck, pipeline. Choices, cost estimates, rates, services. Documents.

BUS 121 / Physical Distribution Management I

Tools of analysis and decision making in the area of physical distribution, decision trees, PERT, CPM, transportation models, linear programming, forecasting, cost analysis techniques, computer applications.

BUS 205 / Inventory Control II

Follows Inventory Control I. Emphasis on more sophisticated analytical, mathematical, and graphical control techniques and approaches.

BUS 210 / Physical Distribution Systems

A survey course dealing with the actual movement of products from the producer to the customer. Areas involved include communication, order processing, inventory control, material handling, warehouses and warehousing, location analysis, protective packaging and traffic management.

BUS 211 / Human Resources Management

This is a course designed to develop a student's skills in such areas as communications, motivation, organizational skills, self-initiative, basic management techniques. The course attempts to stimulate as much as possible a real business environment.

BUS 215 / Media Application

Students will learn how to use oral and written media in obtaining employment. Students will learn principles and techniques which can be used in on-the-job professional development. Emphasis will be on individual assignments and group activities. The course leader provides personal counselling and coaching.

BUS 220 / Traffic II

Follows Traffic I. Further expansion and development of areas in Traffic I. On-job case situations.

BUS 221 / Physical Distribution Management II

Follows PDM I. Problem solving, applications, on-job case situations. Emphasis on integrated systems.

BUSINESS & COMMERCE - CONT'd.

BUS 307/312 / Legal, Medical & General Terminology

This course is designed to familiarize the student with the terminology likely to be encountered in the courts.

BUS 308 / Court Procedures

The purpose of this course is to familiarize the student with the duties performed by a court reporter and the manner in which a court functions.

BUS 309/310 / Current Events

A good reporter is well-read and well-informed. This course is designed to keep the student abreast of the latest development in politics, science, and the business and medical worlds.

BIOLOGY (FOOD TECHNOLOGY)

BIO 100 / Biology

Review of general biological concepts; structures and functions of living things; chemical and biological evolution; cellular organization; life activities; metabolism; nutrition; respiration and energy utilization.

BIO 200 / Biology

An introductory course in food microbiology with emphasis on bacteriological techniques.

CHEMISTRY

CHEM 100 / Chemistry

Semester 1 - Physical and chemical changes; kinetic and atomic theory; chemical bonding; reactions; equations; periodic table; solids, liquids, and solutions.

Semester 11 - Reaction rates; chemical equilibrium; solubility, acids and bases; ph problems, electrochemical and nuclear chemistry; organic chemistry; experiments.

CHEM 102 / General Chemistry

Semester 1 - Physical and chemical changes; kinetic and atomic theory; chemical bonding, chemical reactions and equations, periodic table, solids, liquids.

Semester 11 - Reaction rates; chemical equilibrium; solubility; acids and bases; ph problems; oxidation and reduction; electrochemical and nuclear chemistry.

CHEMISTRY - Cont'd.

CHEM 105 / Chemistry

Fundamentals of chemistry; mixtures and substances; atomic structure; acids and bases; chemical equations; mole and molarity concepts; ph; metallurgy; chemistry of photography and papermaking; inks and pigments.

CHEM 107 / Chemistry

Physical and chemical changes; kinetic and atomic theory; valences, compounds, formulae, equations, nomenclature; reactions, periodic table, chemical bonds; molecular structure; solids, liquids, solutions, reation rates and equilibrium; solubility, acids, bases, ph problems, organic chemistry.

CHEM 110 / Chemistry

Semester I - Introduction to chemistry. Physical and chemical changes. Kinetic theory, atomic theory, valences, compounds, formulae, equations, nomenclature, chemical reactions, the structure of the atom; the periodic table, chemical bonds and the structure of molecules; solids, liquids and solutions. Rates of equilibria; acids and bases, neutralization, ph problems, oxidation and reduction, galvanic corrosion, water hardness.

Semester II - Rates of reactions and chemical equilibrium. Fundamental laws of chemistry, solubility equilibria. Acids and bases, neutralization, ph problems, oxidation and reduction. Elementary electrochemical and nuclear chemistry. Introductory organic chemistry. Associated laboratory experiments.

CHEM 111 / Analytical Chemistry

Qualitative analysis. Determination and characterization of ions in solution. Quantitative analysis. Application of laws of stoichiometry to gravimetric and volumetric analysis. Solutions, indicators, concentration, normality, molarity, precipitation. Associated laboratory work. Instrumental analysis. Colorimetric analysis, analysis by refractive index spectrophotometry, turbidimetry, mass spectrometry, polarimetry, electroanalysis.

CHEM 112 / Industrial Chemistry

The organization and operation of the chemical industry; structure of the industry; unit processes; flow diagrams; equipment; raw materials and materials of construction; selected process industries for the manufacture of resins, polymers and inorganic chemical products. Field trips to these industries.

CHEM 113 / Organic Chemistry

Definitions, bond types, classification, structureal formulae and nomenclature. Alkanes, alkenes, acetylene, alkyl halides, alcohols, ethers, aldehydes, ketones, acids, esters, optical activity, amines, aromatic hydrocarbons, aromatic nitro compounds, aromatic amines, sulphonic acids, phenols. Associated laboratory work.

CHEMISTRY - Cont'd.

CHEM 135 / Chemistry

Introduction to chemistry. Physical and chemical changes. Kinetic theory; valences, compounds, formulae, equations, nomenclature. Chemical reactions, the structure of the atom, chemical bonds.

CHEM 168 / Chemistry

Atomic theory; symbols; formulae; bonding; molecules and ions; acids and bases; corrosion; electroplating; precious metals; inorganic solvents; organic chemistry; structural formulae; applications of organic chemistry in fields of plastics and organic solvents.

CHEM 202 / Organic Chemistry

Semester I - Organic chemistry; nomenclature, saturated and unsaturated hydrocarbons; aliphatic and aromatic compounds; alkyl and aryl halides; alcohols, phenols and ethers; organometallic compounds.

Semester II - The carbonyl group; aldehydes and ketones, atomatic substitution; carboxylic acids; derivatives of acids; aliphatic and aromatic amines and nitro compounds; diazonium compounds and simple dyes; optical isomerism; amino acids.

CHEM 203 / Organic Chemistry Lab

Preparation and properties of some organic raw materials used in manufacturing resins; preparation and testing of polymers used in coatings.

CHEM 207 / Chemistry

Semester I - Organic chemistry, alkanes, alkenes, alkynes, alcohols, carboxylic acids, acid halides, anhydrides, ethers, esters, aldehydes, ketones, amines, aromatic and alipatic compounds, amino acids, proteins.

Semester II - Chemical bonding, molecular weight, molecular configurations; synthetic resins, properties of dental materials, denture base resins, polymers, gypsum products.

CHEM 210 / Polymer Chemistry

Semester I - Basic concepts of polymer science. Molecular forces and chemical bonding, functionality, molecular weight and its distribution, configurations and conformations, morphology, addition and condensation, polymerization, copolymerization. Methods for determining molecular weights of polymers. Polymerization techniques.

Semester II - Natural organic and inorganic polymers. Degradation of polymers. Properties of polymers. Rheological properties and processing of polymers. Instruments for measuring rheological properties. Newtonian and non-Newtonian fluids. Types of flow. Polymer solutions and dispersions. Solid and molten polymers. Application of polymers. Associated laboratory experiments.

CHEMISTRY - Cont'd.

CHEM 212 / Industrial Chemistry

Equipment used for grinding (dispersion) of pigments into liquid vehicles; ball and pebble mills, sand grinder, three-roll mill, high speed grinding equipment; piping and pump calculations in the paint plant; mill base letdown; dispersion behaviour and fineness of grind; film applicators.

CHEM 215 / Chemistry

Introduction to the principles of chemistry including discussions of atoms, molecules, ions, atomic and molecular weight, chemical changes, acids and bases and chemical equilibrium. A study of the chemical composition of cements and concrete.

CHEM 300 / Chemistry

This course will cover the basic composition, structure and properties of foods, as well as the chemistry of changes occurring during processing and storage.

CHEM 301 / Biochemistry

An "in viva" and "in vitro" study of the cellular chemistry. The metabolism of the carbohydrates, liquids, and proteins as well as the role of the vitamins, minerals, and water. Energy transformations, both aerobic and anaerobic will be discussed. Qualitative and quantitative biochemical analysis.

CHEM 302 / Chemistry

This course will deal with the principles, methods and techniques of qualitative and quantitative, physical and chemical analysis of foods. Standard official methods will be taught employing modern analytical instrumentation.

CHILD CARE

CHI 160 / Field Practice

Field practice is an integral part of the course in affording students supervised clinical experience in a variety of settings. Field experience is considered an essential concomitant to the behavioural sciences.

CHI 161 / Human Growth and Development

The normal growth of the child is followed from birth to adolescence including physical emotional and intellectual development. The emphasis is on the first six years of the child's life and his emotional growth during this time.

CHILD CARE - Cont'd.

CHI 162 / Health and First Aid

A lecture-demonstration course focussed on enabling the beginning student to identify and meet the basic physical and safety needs of the children and youth in their care. A standard first aid course is included as well as simple home nursing procedures.

CHI 164 / Caring for the Disturbed Child

The purpose of this course is to arrive at a treatment philosophy. Class discussions are based on students' observations from field placement. Emphasis is placed on areas of basic care and understanding of behaviour of children and staff.

CHI 165 / Creative Activities with Children

This course will explore a variety of media through play and investigate broad areas of activities that require specific skills of the child. It is the essence of play that the experience is more important than the result. It is through the "doing" that structure actually emerges; the form of anything is latent in the process.

CHI 166 / Social Services

Legislation and institutions are studied and related to the child care field. The course includes field trips, guest speakers and class discussions.

CHI 167 / Student Group Seminar

Each week staff advisors meet with their students to discuss common concerns and explore issues raised by either faculty or students.

CHI 169 / Introductory Psychology

Readings and lectures explore some of the findings and developments in the areas of scientific method, perception, learning and motivation, emotion, personality and social psychology.

CHI 170 / Reading Seminar

The objective of this course is to assess the works of several modern writers in their attempts to answer questions concerning human social roles, motivations, sexuality and concepts of modern morality.

CHI 171 / Introductory Sociology

Readings and discussion of the basic concepts in sociology will be used in analyzing various aspects of Canadian society in intergroup relations, rural and urban communities, social classes and social institutions.

CHI 260 / Field Practice

A continuation of CHI 160.

CHILD CARE - Cont'd.

CHI 261 / Psychopathology of Childhood

Discussions include comparison of normal and abnormal development according to the personality theories of Freud, Erikson, descriptions and functioning of defenses and study of specific categories of disturbance (i.e. autism, schizophrenia, etc.).

CHI 262 / Caring for the Disturbed Child/Adolescent

A continuation of Caring I, emphasizing the development of treatment plans for disturbed children on an individual basis. During the second term, focus of the course will be on the adolescent and the why and how of adolescents in care.

CHI 265 / Activities with Children (Water Safety)

A combined theory-practice course to ensure safety and some skill in working with children in and around water.

CHI 267 / Student Group Seminar

A continuation of CHI 167.

CHI 263 / Treatment Philosophies

An introduction to therapeutic approaches extant in child psychiatry and the mental health field today. Major theories underlying the chosen methods of treatment are discussed.

CHI 269 / Professional Development

A discussion-seminar approach scrutinizing the specific role behaviours expected of the graduate by employers, colleagues, and other disciplines.

CHI 271 / Therapeutic Programming

Discussion on the meaning and purpose of play and fantasy and the use of such understanding for more effective communication with children.

CHI 270 / Group Process

Theoretical consideration of the ways groups affect individual behaviour will be examined in practical group situations.

CHI 273 / Social Problems

The study of the nature and causes of contemporary social problems: drugs, sexual deviation, adolescence, old age, suicide, etc..

CHI 273 / Independent Study

The student will identify and research an area of interest under the direction of a faculty member.

CIVIL ENGINEERING

CIV 100 / Construction Materials and Methods

A general introduction to architectural drafting, methods and materials, preparation of working drawings, building construction and construction equipment, mechanical installations pertaining to building systems, the manufacture and use of construction materials, interpretation and preparation of design and detail drawings for steel and concrete structures, use of concrete laboratory for study in quality control and testing procedures, introduction to the preparation of estimates.

CIV 101 / Engineering Drawing and Design

Fundamentals of structural engineering drawing, according to accepted standards and specifications.

CIV 103 / Construction Materials

Engineering testing and investigation of soils; the manufacture and use of cement and asphalt; the design and control of concrete mix; the design of asphalt mix as applied to highway construction.

CIV 200 / Structural Drawing and Design

Practical introduction to basic design and drawing, as applied to modern structures in reinforced concrete and structural steel.

CIV 202 / Municipal Services

Collection and distribution of community water supply, factors and manipulations influencing run-off and disposal, pipe sizes, gradients and location of sewer types.

CIV 203 / Highway Technology

Population and traffic analysis; location, design and construction of roads; legal and engineering requirements; materials and maintenance.

CIV 204 / Specifications and Estimating

A study of building by-laws, regulations, planning procedures and preparation of estimates.

CONSTRUCTION

CO 100 / Building Construction

Site selection and excavation, concrete formwork design, construction equipment, power and hand tools, detailing construction elements, plan interpretation, systems and types of construction, field trips.

CONSTRUCTION - Cont'd.

CO 101 / Quantity Surveying I

Method of measurement and preparation of estimates for building works.

CO 102 / Mechanical Installations

Storm and sanitary drainage, plumbing layout, venting and fire protection.

CO 103 / Construction Materials

The manufacture and use of cement, steel, brick, clay, wood and other building products; the control and application of quality concrete under laboratory conditions.

CO 104 / Site Engineering

The use and application of survey instruments, setting out buildings, offsets, curves, grading and earthworks.

CO 105 / Principles of Concrete

A detailed study of cement and its properties, concrete mix design, quality control, testing procedures and compilation of results.

CO 106 / Concrete Construction Methods I

An introduction to concrete components used in all construction; the mixing, transporting, placing, finishing and curing of concrete.

CO 107 / Blue Print Reading and Drafting

Fundamentals of drafting, interpretation of concrete structural drawings.

CO 200 / Building Construction

Reinforced concrete, structural steel, laminated timber and masonry construction and equipment; construction organization; architect, engineer and trades. Drawing and interpretation; field trips.

CO 201 / Quantity Surveying

Advanced method of measurement and preparation of estimates for building works.

CO 202 / Mechanical Installations

A study of those elements of environmental controls, such as heating, air conditioning, electrical and plumbing design and layout within the modern building.

CO 203 / Contracts and Specifications

Contracts, contract law, standard forms, methods and applications of various scheduling systems.

CONSTRUCTION - Cont'd.

CO 204 / Mechanical and Electrical Installations

A study of those mechanical and electrical devices and installations affecting the total design of a structure, such as elevators, escalators, conveyors; fire protection, plumbing, heating, air conditioning and electrical layouts.

CO 205 / Principles of Concrete

Continuation of detail study, progressing fr CO 105 of cement and its properties.

CO 206 / Concrete Construction Methods II

Regulations and building code, construction and inspection methods, basic study in light-weight concrete, specialized concrete building components.

CO 207 / Concrete Structural Design

Theory and design of reinforced concrete structures and structural elements.

COATING TECHNOLOGY

COAT 100 / Basic Paint Technology

Introduction to coatings technology; formation and structure of paint films; oils, solvents; extender and white pigments; inorganic and organic colored pigments; black and metallic pigments; driers and additives; principles of formulation and coating calculations; varnish technology; emulsion paints; solvent paints; industrial paints; cellulosic and lacquer finishes; corrosion and chemical resistant finishes; special industrial coatings; dispersion and grinding; testing methods; surface preparation; application techniques. Related laboratory experiments.

COAT 200 / Coatings Technology

Plasticizers; emulsion technology; specialty coatings; colour and colour matching; film properties; interfacial phenomena; solvent-binder-pigments interaction; paint analysis; adhesion.

COAT 201 / Coatings Laboratory

Preparation, application, methods, and evaluation of various types of coatings.

COAT 202 / Thermoplastic Resins

Raw materials, manufacturing, chemistry, and properties of thermoplastic polymers and co-polymers used in coatings.

COATINGS TECHNOLOGY - Cont'd.

COAT 203 / Thermoset Resins

Raw materials, manufacturing, chemistry, curing and properties of thermoset polymers and co-polymers used in coatings; polyesters, alkyds, epoxies, phenolics, silicones, amino resins, urethanes, furnaces.

COMMUNITY WORKER

CW 100 / Field Work

Field work is an integral part of the program in affording students supervised experience in selected settings and will be concurrent with course work.

CW 101 / Working with Families

Sociological survey of the family as an institution. Variations in family structure, roles and needs. Socialization processes and problems of organization and dis organization. Particular needs and characteristics of ethnic family groups. Preventive measures to preserve the integrity of families through group work, day care provision, after school activities, provision of recreation and leisure time activities and counselling.

CW 102 / Programming Theory and Practice

Development of community leisure time pursuits. Utilization of existing neighbourhood and civic facilities: parks, swimming pools, rinks gymnasiums, drama groups, clubs, libraries. Programming for senior citizens and after school activities for children. Basic knowledge and practical fundamentals in outdoor activities. Safety and accident prevention. Red Cross first aid, swimming and water safety.

CW 103 / Group Dynamics

Theoretical consideration of the ways groups affect individual behaviour will be examined in practical group situations. Emphasis will be on student involvement in role-playing and problem solving, dealing with one-to-one, small group and family situations.

CW 104 / Environmental Studies

Consideration of man and his urban environment; various life-styles and urban values; contemporary urban problems such as poverty, urban renewal, ethnic minorities. Study of the roots of conflict and the destructive results on communities. Survey of existing institutions designed to promote relevant patterns of housing, recreation and health. The effects on man of pollutants, poverty and despair.

COMMUNITY WORKER - Cont'd.

CW 105 / Community Resources

Introduction to the legal system, methods and institutions. Laws relating to community welfare, legal aid, provincial family courts, community and social services. Survey of agencies and non-governmental organizations created for the benefit of citizens, planning and co-ordinating organizations, tenants associations and volunteer groups.

CW 106 / Interviewing and Counselling

Theory and practice of interviewing and counselling; functions of the interview; fundamentals of successful interviewing; communication facilitating methods and barriers to effective communication; assessment and recording; individual, group and family counselling.

CW 108 / Human Growth and Development

The basis for understanding people lies in a study of normal infant, child and adolescent growth and development. This course provides ground work knowledge of developmental processes in the realms of intellectual, emotional and social maturation.

CW 109 / Introductory Psychology

Readings and lectures explore some of the findings and developments in the areas of scientific method, perception, learning and motivation, emotion, personality and social psychology.

CW 110 / Introductory Sociology

Readings and discussions of the basic concepts in sociology will be used in analyzing various aspects of Canadian society in intergroup relations, rural and urban communities, social classes and social institutions.

CW 111 / Political Science

This course is designed to give the student an understanding of municipal, provincial and federal politics and will explore the means and consequences of social action.

CW 112 / Communication and the Media

Successful public relations and small group encounters depend upon an ability to communicate effectively across a broad spectrum of people. Knowledge of and experience in communication will be developed through face to face discussion, small group encounters, public speaking and through newspapers, radio and television media.

DAY CARE WORKER

DCW 100 / Infant and Child Development

A look at development from birth to 2 years from the perspective of (1) heredity and environment; (2) growth and maturation; (3) learning, motivation and emotion; (4) language, and (5) intelligence. A discussion of relevant infant care routines and programs and the adult's role in those programs.

DCW 101 / The Infant's Physical Health and Well Being

To increase the awareness of healthful concepts specifically to working with infants and children in a day care centre. A standard first aid course is given by the Canadian Red Cross.

DCW 102 / Introductory Psychology

A brief survey course of various branches of psychology to provide the student with a basic understanding of human behaviour and some skills in applying this knowledge to day care situations.

DCW 103 / Mental Health

A seminar on the infant's personality development and the impact of the infant-adult relationship on the growth and development of the child.

DCW 104 / Principles of Day Care

The examination, through study and discussion and in conjunction with observations and the supervised field practice of current ideas and existing day care programs in meeting the developmental needs of infants and children in a variety of day care settings.

DCW 105 / Creative Expression in Childhood

Thie course will explore the creative process: what activates it; how it functions; how its universal aspects have implications in the modes of learning and self-expression of the growing child. Accordingly, the course will investigate play and a variety of media, through seminars and workshops.

DCW 106 / Introductory Sociology

A brief survey course to provide the students with a basic understanding of social structure and some skills in applying this knowledge to day care situations.

DCW 107 / Professional Development

This course will include concepts of professiona behaviour and responsibilities to children, parents, colleagues and members of allied professions as well as the importance of responsibility for self growth within the day care field.

DAY CARE WORKER - Cont'd.

DCW 108 / Legislation and Community Services

A study of legislation pertinent to day care in Ontario, specifically the Day Nurseries Act as well as a brief survey of day care legislation across Canada. A survey of agencies concerned with the health and welfare of the child and the family.

DCW 109 / Nutrition and Food Management

Basic concepts in menu planning, food purchasing, storing, and preparation are studied with relation to nutrition. The importance of managing a day care kitchen is discussed. Current concepts of feeding practices, particularly with infants, is emphasized.

DCW 110 / Special Studies

A reading seminar in English literature supported by background philosophy on man's search for identity in the 20th century.

DCW 111 / Tutorials

The class is made up of small groups headed by a staff advisor, who is also the co-ordinator between the college and the field placement, to discuss the courses in relationship to the field placement.

DCW 112 / Supervised Field Practice

Individual student supervision and evaluation is given in selected day care settings to provide an opportunity for the student to observe and to practice with infants and children in day care as well as to provide an opportunity for the student to gain necessary information for different course assignments.

DCW 200 / Human Growth and Development

A study of the process in which an infant grows and develops into a mature human being - the nature of the relationship between the child and society - the stages of development to maturity from a variety of theoretical and practical viewpoints.

DCW 201 / Children With Special Needs

An examination of etiology and treatment concepts related to children with special needs: physical, psychological and sociological.

DCW 202 / Cognitive Development

Aim: To develop a theoretical framework for examining how learning occurs. The student will be required to research and generate a program within an area of individual interest such as science drama, etc..

DAY CARE WORKER - Cont'd.

DCW 204 / Varieties of Day Care

A survey of various day care programs reflecting different philosophies in day care accompanied by field trips where possible.

DCW 205 / Planning and Management of Day Care Facilities

A study of the resources and skills needed in setting up and managing a day care centre, starting with legal requirements, initial stages of planning and developing programs and progressing to final stages of financing, accounting and managing a day care operation.

DCW 206 / Family Dynamics

A study of the various interactions in families and the facts and issues which influence them and a practical application of this knowledge to actual day care family situations.

DCW 207 / Parent Interviewing, Counselling and Education

A survey of parent education theories with opportunities to practice techniques of interviewing, counselling, group education and community organization.

DCW 208 / Group Process

A study of group dynamics with opportunities to develop skills in leading groups or affecting group processes.

DCW 210 / Tutorials

The class is made up of small groups headed by a staff advisor, who is also the co-ordinator between the college and the field placement, to discuss the courses in relationship to the field placement.

DCW 211 / Supervised Field Practice

Individual student supervision and evaluation is given in selected day care settings to provide an opportunity for the student to observe and to practice with infants and children in day care, as well as to provide an opportunity for the student to gain necessary information for different course assignments.

DENTAL TECHNICIAN

DENT 100 / Dental Laboratory & Lectures I

The practical laboratory procedures of the dental technician program enable the student to develop all the techniques involved in present day dental technology; these practical exercises are extended over the entire three-year program and account for 80% of the complete course; combined with the practical procedures are the theoretical principles and fundamentals involved.

DENTAL TECHNICIAN - Cont'd.

DENT 101 / Dental Materials

This course makes a detailed study of the composition and physical properties of impression materials; rigid, plastic and elastic; the manipulation of impression materials; properties and composition of gypsum products, namely acrylic resins, dental waxes; composition of dental porcelain, building and firing.

DENT 102 / Dental Anatomy

This course consists of a series of lectures dealing with the basic and fundamental anatomy of teeth and related structures. Since a satisfactory end result is imperative in all types of dental restoration, the technician must have an intimate knowledge of outline form and occlusion, and be able to reproduce this in an art form unlike any other.

DENT 103 / Science of Dental Materials 107

A study of materials used in dental work from the standpoint of their physical properties. Compressive and tensile strengths. Properties of colloids. Dental waxes and their properties.

DENT 104 / Basic Health Science

This subject taught in the first semester concentrates on the cell and primary tissues, integumentary system, musculoskeletal system, nervous system, circulatory system, respiratory system, digestive system, genito-urinary system, reproductive system, endocrine system, and special senses. Emphasis is placed on microbiology.

DENT 105 / Dental Laboratory

The practical laboratory procedures of this course provide the student with a sound basis to enable him to develop all the techniques involved in present day dental technology and include: identification of equipment, application of safety regulations, tooth sketching, tooth carving, models, base plates, occlusal rims, custom impression trays and pinning and puring stone dies.

DENT 106 / Dental Materials

This course makes a detailed study of the composition and physical properties of impression materials: rigid, plastic, and elastic. The manipulation of impression materials. Properties and composition of gypsum products, acrylic resins, dental waxes. Composition of dental porcelain, building and firing.

DENT 107 / Dental Assisting

Emphasis is placed on the four-handed concept and team approach to dental assisting. The students are trained in dental office procedures, supplies, film processing, patient education, first aid, identification and care of instruments and equipment, chairside procedures and instruments exchange.

DENTAL TECHNICIAN - Cont'd.

DENT 108 / Professional Development

Students are trained in professional decorum, good grooming and conduct befitting young professional women. Upon graduation, it is expected that students will conduct themselves professionally and function efficiently as competent dental auxiliaries.

DENT 109 / Dental Radiology

The graduate will know the properties and equipment, protective regulations and measures, as applicable to dentistry; he will be able to produce and process diagnostic dental x-rays, applying the bisecting angle or the right angle paralleling technique, as directed by a dentist.

DENT 110 / Oral Hygiene

Emphasis is placed on prevention and the students are instructed in patient education, oral hygiene procedures, brushing techniques, dental flossing, stimulation and home care.

DENT 111 / Clinical Practice

Under the supervision of highly qualified participating dentists, the students will spend one week at the Faculty of Dentistry, University of Toronto. In the clinical environment at the Faculty of Dentistry, the students will assist under-graduate dental students with routine dental procedures. Furthermore, the students will be assigned to private dental practices for one week. Under the supervision of qualified dental practitioners, the students will observe and participate in the clinical procedures, reception of patients, administration, correspondence, accounting and clerical duties performed in a dental office.

DENT 200 / Dental Laboratory & Lectures II

A continuation of Dental Laboratory & Lectures I.

DENT 300 / Dental Laboratory & Lectures III

A continuation of Dental Laboratory & Lectures II.

DICTAPHONE

DIC 105 / Dictaphone

This is a short course to familiarize the secretarial student with the use of transcribing equipment, whether the dictaphone be on belts, tapes or discs.

DICTAPHONE - Cont'd.

DIC 200/201 / Medical Dictaphone

Initially transcription will be from professionally dictated tapes, belts and discs, including material such as operative notes, final summaries, case histories, etc., covering areas such as neurology, internal medicine, orthopedics, etc. In the last semester, emphasis is on intensive production of actual hospital dictation in addition to on-job-training in a downtown hospital.

DRAFTING

DR 100 / Technical Drawing

Equipment, instruments and materials: pencil technique, lettering geometrical constructions. Orthog-aphic projection. Pictorial drawing: oblique, isometric. Dimensioning: fractions, decimals, Ford Rule, dimensioning systems. Freehand drawing: orthographic, isometric, proportions, notes. Sectional views: full half, offset. Section lining, conventions. Auxiliary views: primary and secondary. Fasteners: threads, threaded products, terminology, symbols, rivets, keys, welding, brazing. Pipe fittings and valves: types of fittings, piping drawings, symbols. Assembly drawing: sectional views, exploded assemblies, bills of material. Detail workings: surface finish, tolerances, manufacturing methods. Cams: motion, displacement diagrams, cam profiles. Gears: principle types, terminology, manufacturing. Developments: basic descriptive geometry, parallel and radial line developments. Electrical and electronic drawing: symbols, wiring diagrams, instrumentation symbology, block diagrams, printed circuits.

DR 102 / Architectural Drafting I

Preparation of working drawings of plans, sections, elevations and details of frame and masonry construction; perspective drawings; rendering and model making.

DR 106 / Architectural Drafting I

Introduction to dimensions, symbols and conventions; methods and materials for light construction; study of the National Building Code, in conjunction with the preparation of working drawings.

DR 107 / Mechanical Installation Drafting I

Mechanical drawing techniques or plumbing, drainage, types of hot water heating, air handling, and water supply.

DR 108 / Structural Drafting I

Structural steel: Design of simple beams, simple connections, detailing practices. Reinforced Concrete: Framing plans; detailing beams, slabs, walls, bar schedules.

DRAFTING - Cont'd.

DR 109 / Electrical Installation Drafting I

Studies of residential, commercial and industrial wiring systems in single and three-phase layout.

DR 111 / Mechanical Installations Drafting

Mechanical drawing techniques of plumbing, drainage, heating, air conditioning and electrical layout pertaining to building construction.

DR 115 / Structural Drafting

Interpretation and preparation for design drawings of structural steel and reinforced concrete structures.

DR 120 / Descriptive Geometry I

Theory of multiview projection; auxiliary views; points, lines and oblique surfaces in space; true length and true shape considerations; edge views, slopes, and angles.

DR 121 / Descriptive Geometry

Orthographic projection, isometric sketching, auxiliary and revolution methods, practical applications.

DR 124 / Drafting

The principles of engineering drawing, geometrical construction, orthographic, axonometrics, and oblique projection, dimensioning, sections and auxiliary views. Reading of architectural plans, introduction to piping and duct layout for ventilation, heating and air conditioning systems. Graphical representation of electrical wiring diagrams.

DR 125 / Machine Drafting I

Orthographic and pictorial drawing; working, welding and assembly drawings; introduction to electro-mechanical drawings.

DR 154 / Art and Presentation

Freehand sketching, pictorial drawing, technical illustrating and model making.

DR 202 / Architectural Drafting II

Presentation and working drawings of commercial and institutional buildings, utilizing up-to-date procedures from actual case studies.

DR 220 / Descriptive Geometry II

Plane surfaces, intersections relating to lines, planes and figures, dihedral angles, revolutions, parallel and radial line development, triangulation and vectors.

DRAFTING - Cont'd.

DR 228 / Air Conditioning and Refrigeration

Principles of refrigeration, types of systems, system design, combination systems.

DR 299 / Heating Systems

Principles of operation, types of systems, system design, fuel supply.

DR 230 / Plumbing Systems

Principles of design of various systems, including materials and methods.

DR 232 / Drafting

Systems of piping drawing, including piping symbols with drawing and sketching in multiview, isometric and oblique. Duct layout showing graphical symbols for heating, ventilating, air conditioning, plumbing, piping, valves and fittings. Reading mechanical, architectural and structural plans.

DRESSMAKING

DRES 241

Most efficient ways of cutting and seaming garments and assembling parts to form clothing.

DRES 248

The varieties of "findings", trims, zippers, supplies, etc. and the optimum methods of efficient purchasing and stocking.

DRES 249

Case studies of workroom problems.

ECONOMICS

EC 100 / Economics

Semester I - Forms of economic and business organization, supply and demand, money and banking, personal finance, international trade, business cycle, investment, insurance, uses and sources of credit, taxation.
Semester II - Cost analysis, human relations, sales, government law regulations, social services, classified financial statements, basic bookkeeping practices, proven promotion methods, advertising.

ECONOMICS - Cont'd.

EC 101 / Business Organization

Major economic processes; primary industries; manufacturing, distribution and service industries. Ownership and structure of business enterprises. Forms of public ownership. Major functions of the business enterprise, product development, purchasing, industrial relations, manufacturing, marketing.

EC 102 / Engineering Law and Administration

Semester I - Legal positions of electrical designers and responsibilities of engineer and architects. Small office organization and procedures. Public relations and salesmanship.

Semester II - The labour code, strikes, walkouts, responsibilities of construction firm and labour unions. Professional ethics.

EC 103 / Business Law

A summary of our laws of contract, employment, agency, sales of goods, insurance, bailments, real estate, negotiable instruments, partnerships, corporation, bankruptcy, trade marks, business crimes, and torts.

EC 112 / Business Organization

Forms of business ownership. Personnel. Labour unions and forms of agreements. Production planning and control. Organization of a plastics manufacturing plant.

EC 113 / Business Organization

Maintenance of records; charts; files; cost accounting, receivable and payable. Inventory, stock, supplies, materials, receipts. Budget, expansion, and growth.

EC 210 / Economics I

Basic economics and industrial organizations: forms of economic organization and their strengths and weaknesses. Monetary theory: money, credit and banking, Canadian banking system. Forms of business organization and business financing.

EC 211 / Economics II

Supply and demand business cycles and compensatory countercyclical fiscal policy. Labour economics. Insurance. Civics organization of federal, provincial and municipal government. The place of the food service industry in the economic structure of the nation.

EC 212 / Business Organization

Administrative and office services. Auto data processing. Short, medium and long term financing and functions and methods of marketing. Sales and sales promotion activities.

ECONOMICS - Cont'd.

EC 300 / Business Management

The manager's function in business, pitfalls, planning, capital, business organization, stock purchases, records, credit and collections, depreciation, profit, insurance, merchandising, employment, personnel, business control, relations to the community.

ELECTRONIC DATA PROCESSING

EDP 100 / Introduction to E.D.P.

The course is to provide an overview of business data processing which will prepare the student for further study in the areas of programming and system planning.

COURSE CONTENT: Survey of the history of automatic data processing; punched card data processing; modern business computers; central processing unit; levels of programming languages; software, particularly compilers; various I/O media and devices; batch processing VS online processing; applications; problem solving; algorithms; flowcharts; programming in BASIC, using time-sharing terminals; visits to computer installations.

EDP 101 / COBOL

COBOL programming introduces students to the use of COBOL for solving business-type problems. Programming exercises and case problems provide practical experience and students go, periodically, to the GBC computer centre to witness the testing of their programmes.

EDP 102 / FORTRAN

FORTRAN programming introduces students to the use of FORTRAN for solving business-type problems. Programming exercises and case problems provide practical experience on a time-sharing computer system.

EDP 200 / Advanced COBOL

This course is a continuation of EDP 100 and considerable emphasis is placed on documentation and efficient programming techniques. Case problems provide the student with the opportunity to design and write several related programmes in COBOL.

EDP 201 / IBM/370

This course introduces IBM/370 architecture and discusses in detail the components of the 370 series of computers. Topics include hardware and software features.

ELECTRONIC DATA PROCESSING - Cont'd.

EDP 202 / IBM/370 Assembler Language

An extensive course in IBM/370 assembler language with problems designed to highlight the features of this low level language.

EDP 203 / Systems Analysis

Topics focus on the systems function, with emphasis on problem investigation, leading to the presentation of a proposed solution. Case studies and reference materials assist the student in preparing effective solutions.

EDP 204 / Advanced Programming

This course examines advanced programming techniques used in data processing installations. Miscellaneous topics relate directly to current industry practices and may include study of additional languages such as ALGOL, RPG, and PL/1.

ELECTRICAL TECHNOLOGY

EL 106 / Electrical Fundamentals

Ohm's law, D.C. circuits, power dissipation, magnetism and electro-magnetism, inductance, capacitance, alternating currents, inductive and capacitive reactance, impedance, A.C. circuits, power dissipation and A.C. circuits.

EL 107 / Electrical Fundamentals II

Principles of transformer operation; polarity; autotransformers; three-phase transformer connections; three-phase transformers; three-phase induction motors; single-phase induction motors.

ELECTRONIC TECHNOLOGY

ELTC 101 / Amplifiers Part I

Semi-Conductors and tubes, classes of amplifiers, bias methods and stabilization, configurations and characteristics, voltage amplifier calculations, frequency response of amplifiers (db calculations), distortion cuase and effects.

ELTC 101 / Amplifiers Part II

Power amplifiers, power amplifier calculations (graphics), push-pull amplifiers, heat sinks: semi-conductor devices and applications, F.E.T., unijunction transistor, S.C.R., integrated circuits; oscillators: Armstrong, Hartley, Colpitts, crystal oscillator, T.P.T.G.

ELECTRONIC TECHNOLOGY - Cont'd.

ELTC 102 / AM/FM Receiver Principles

Amplifier modulation; frequency modulation; superhet receivers; F.M. detectors; stereo multiplex.

ELTC 105 / Television Circuitry

Basic transmitting principles; receiver (black and white), typical waveform and voltages, fault finding procedures; tuners, I.F.'s, video amplifiers, sync separators, vertical and horizontal oscillators, horizontal output stage, picture tubes, sound circuitry; receivers (color), color principles, basic circuits.

ELTC 107 / Electronic Fundamentals

Vacuum tubes, principles of vacuum tube operation, load lines, voltage and power amplification; basic transistor principles, semi-conductor physics, doping, semi-conductor diodes, bias techniques, zener diode, basic transistor action, transistor configurations; introduction to electronic systems, communications systems, computer systems, ETV-TV broadcast.

ELTC 108 / Electronic Fundamentals II

A.C. circuits, network theory and calculations; resonance, characteristics of series resonance, characteristics of parallel resonance, Q magnification, traps and filters; power supplies, rectifier systems, transformer supplies, transformerless supplies, voltage regulation.

ELTC 111 / Applied Circuit Analysis

A tutorial in solving problems related to the student's work in his major subject area.

ELTC 200 / Transistors

Transistor theory, hybrid parameters, quantitative analysis of small signal cas-ade amplifiers, graphical analysis of power amplifiers, stabilization techniques, differential amplifier, operational amplifiers; switching characteristics; F.E.T., unijunction transistors - time base generators, tunnel diodes, oscillators, amplifiers, switching, thermistors; multivibrators and sawtooth generators (descriptive CCT analysis).

ELTC 201 / Pulse Circuits

Wave shaped circuits, time constant CR-LR, steady state and transient conditions, problems and applications; multivibrators (quantitative analysis), astable, monostable, bistable (tubes and transistor), triggering and steering circuits, schmitt triggers; sawtooth generators (quantitative analysis), voltage and current types, synchronization; digital voltmeters.

ELECTRONIC TECHNOLOGY - Cont'd.

ELTC 202 / Computer Principles

Computer arithmetic; logic circuits, Boolean algebra, diode and transistor matrices, basic registers' - shift, storage, counters; adders and subtractors, exclusive or gates, half adders and subtrators, full adders and subtractors (truth tables, "Ven" "karnaugh", veatch diagrams); basic computer system.

ELTC 203 / Communications Principles

Amplifiers, miller effect, negative feedback, linear amplifiers, varactor multipliers; R.C. phase shift oscillator, crystal oscillator, crystal ovens and stability calculations; amplitude modulations; AM transmitters; AM receivers; single sideband; frequency modulation; direct FM transmitters; phase modulation; FM receivers.

ELTC 211 - Computer Systems

Advanced register circuits, serial and parallel counters, modulo counters, shift registers; computer memories; peripheral equipment, teleprinters, high speed printers, tape transports, card and tape readers, card and tape punch, numerical displays, graphical displays; computer programs, machine programming; D.C. electronic analog computers.

ELTC 212 / Communications Systems

Transmission line parameters, types and impedance matching problems; WG parameters, hardware and smith chart applications; M devices - active and passive (klystrons, magnetrons, TWI, bulkeffect devices, lasers). Basic radar and typical application; multiplex theory and frequency division systems, applications. Antenna theory.

ELTC 214 / Acoustic Systems

Introduction to architectural drafting; methods and materials; sound analysis; acoustics and sound control; noise and noise control; salesmanship.

ELTC 213 / Laboratory

In each course and each area of specialization, laboratory periods will be given. The laboratory exercises have been developed so that they will reinforce the materials given in theory. Also, the laboratory exercises emphasize measuring techniques and principles. Because of the ultimate goal in Engineering Technician training, "hands on" laboratory training is considered essential and, therefore, this phase of the course is considered to be a major area of study.

ELTC 215 / Audio Systems Theory and Equipment

Audio measuring equipment; audio lines including losses, matching, balancing, shielding and grounding; audio amplifiers, audio transducer principles and applications, stereo systems; audio control consoles; audio tape recorders; intercommunications systems, studio acoustics.

ELECTRONIC TECHNOLOGY - Cont'd.

ELTC 216 / Video Systems and Transmitting Systems, Theory & Equipment

Sync. generator; genlock and color lock; pulse amplification and distribution; video signal composition and standards, NTSC generator signal and vetorscope analysis; signal distribution, atching and matching systems; video and waveform monitors, video amplifiers, video switchers; stabilization and processing amplifiers; vertical interval test signal techniques. Transmitting systems and functions; transmitter analysis and standards; transmission lines and antenna design principles; propogation patterns and radiation measurements; UHF and VHF reception and interference characteristics; basic microwave systems and basic CATV systems.

ELTC 217 / T.V. Cameras, Tape Recorders & Telecine Theory & Equipment

T.V. monochrome and color cameras; image conversion tubes, characteristics and functions; monochrome camera chain functions and circuit analysis; color camera chains systems and circuit analysis; matrixing devices; camera lens systems and illumination, video tape systems; wideband recording techniques; rotating head principles and scanning; video tape system requirements, , video signal processing; operational and maintenance procedures; chroma signal recording methods and principles; functional analysis of intersync, amtec, colortes and tape editing. Film techniques and telecine equipment; film sound (optical and magnetic); dubbing systems; film development and printing principles, video film projectors and telecine chains; monochrome and color telecine camera chain circuits analysis; film recording of video signals.

ELTC 218 / Test Equipment Theory & Practice

Function and usage of oscilloscopes and probes including waveform monitors, vectorscope and stairstep generators; test equipment function and adjustments; T.V. picture waveform fault recognization and analysis; regular and emergency power distribution tests; safety measures.

ELTC 230 / Electronic Circuits

Amplitude modulation; frequency modulation; electronic circuits, oscillators, heterodying, detection, amplifiers, receiver alignment.

ELTC 231 / Transistors

Transistor theory, hybrid parameters, quantitative analysis of small signal cascade amplifiers, transducer gain equation, collector efficiences, stabilization techniques; switching characteristics; unijunction transistors, time base generators, tunnel diodes - oscillators, amplifiers - switching; multivibrators and sawtooth generators.

ELTC 232 / Pulse Circuits

Similar to ELTC 201, using mathematical models.

ELECTRONIC TECHNOLOGY - Cont'd.

ELTC 300 / Component Technology

General considerations regarding cost, reliability & environment; standards and specifications: the component & the component manufacturer; components, only highlighting the major characteristics & behaviour patterns under environmental and operational conditions; tests; seminars; laboratory; the purpose is to familiarize the student with the more uncommon measurements on components, such as temperature behaviour of certain types of resistors (stability).

ELTC 301 / Computer Aided Design - Basic Principles

Basic FORTRAN programming; packaged programs; PDP 8 language.

ELTC 302 / Communication Technology I

Noise; amplitude modulation; frequency modulation; single side band; theoretical analysis of the A.M. signal, methods of modulation and demodulation, transmitter, communication receiver, measuring techniques.

ELTC 303 / Solid State Amplifier Design

Large signal amplifier, design analysis of class B, class B push pull, and complementary amplifiers, included are considerations of distortion, stability, and heat sinking; non-linear amplifiers, high frequency design consideration, relative load consideration, nyquist and bode plot considerations, tuned circuit amplifiers; feedback amplifiers, operation amplifiers.

ELTC 304 - Pulse Technology

Analysis of basic waveforms, using higher mathematics; C.R. circuits; R.L. circuits, waveshaping circuits, transistor switching characteristics; sweep generators: analysis and design; delay lines.

ELTC 305 / Communication Technology

Transmission lines: antennas; frequency generators; specialized testing procedures: land lines.

ELTC 306 / Logic Systems

Computer arithmetic; basic logic circuits, design and analysis, and, or, nand, nor exclusive or, not; Boolean algebra, truth tables, Venn diagrams, Veatch diagrams, Karnaugh maps; register circuits, counters (up, down, serial, parallel, module); Matrix circuits, design and analysis; aritchmetic circuits.

ELTC 307 / Automatic Control Systems

Feedback principles, notation and definitions, transform theory; feedback diagrams, nyquist, stability, bode, etc.; servos, syncros, servo amp., ward leonard system; application, transducers, photoelectric controls, induction and dielectric heating, motor controls, chemical controls.

ELECTRONIC TECHNOLOGY - Cont'd.

ELTC 308 / Electronic Construction Design & Packaging Principles

Packaging principles; construction principles; materials and finishes; machine shop techniques and equipment; environmental test techniques; specifications; cost.

ELTC 309A & 309B

Introduction, systems, sub systems, modules, contractual and non-contractual requirements; design requirements, sub systems made by the same contractor, sub systems made by different contractors; cost, maintenance compatibility, spaces requirements, warranty, delivery; case study; project selection.

ELTC 310 / Computer Technology

Memory circuits; peripherals; control circuits; analog computers; A/D conversion techniques.

ENGINEERING DRAFTING

ENDR 51 / Industrial Terminology

Basic arithmetic, common industrial weights and measures, temperature, pressure, simple sketches and layouts, shop terms, standards, basic blueprint reading.

ENDR 100 / Mechanical Drafting

The use of drawing instruments involving geometrical constructions and conventional drafting practices; multi-view drawings, involving principle and auxiliary views; selection of views; scale and size of drawing paper; freehand sketching and dimensioning; drawing of castings and the use of sectional views; dimensioning techniques and common matching notes for drawings; surface finishes, a study of contemporary manufacturing prints; ink techniques and lettering devices; graphs and charts; pictorial forms of drawing and dimensioning.

ENDR 101 / Machine Drawing

Drawing problems involving orthographic projection, view selection, scale, spacing and general arrangement on the paper. Review of dimensioning techniques, auxiliary arrangement on pictorial views. Sectional view; main types, selection, conventional practices. Working drawings of sets of mating parts. Advanced techniques of dimensioning; cartesian co-ordinates, tolerances, classes of fits, the metric system. Welded and fabricated parts; welding symbols and specifications, welded assembly drawings, conventions. Sub-assembly and final assembly drawings, bills of material, assembly instructions, notes. Fastening devices; types, specifications, selection. Gearing; cams, bearings, common machine components. Patent office drawings. A study of current blueprint of machine parts, weldments and assembly drawings.

ENGINEERING DRAFTING - Cont'd.

ENDR 102 / Machine Drawing and Design

Selection of principal views using third angle orthographic projection drawing system. Sectional and auxiliary views. Graphs and charts. Axonometric drawing systems and dimensioning. Conventional drawing practices. Drawing office standards. Dimensioning methods and systems. Preparation of detail working drawings involving tolerances, limits, machine fits and finishes. Machine details such as fasteners, keys, springs, taper pins, and their purposes, selection, and applications. Thread systems; terminology, representation, specifications, standards and applications. Materials of modern industry; ferrous metals, non-ferrous metals and plastics. SAE numbering system for steel, heat treatment of steels small tool operations. Technical sketching in the orthographic and the isometric systems. Drawing office systems and work routines; filing systems, change notes, design and layout procedures, printing of drawings, print distribution and records. Common devices and mechanisms such as springs, cams, gears, clamps. Permanent assembly of parts by welding, brazing and soldering. Types of welding. Canadian Welding Bureau symbols and recommended practices. Design of fabricated and welded parts; special design and production techniques for welded products.

ENDR 104 / Pipe Drafting Design

Introduction to pipe classification, jointing methods, and pipe fittings. Valves: types, function and design. Representation of pipes, fittings and valves by single and double line symbols. Drawing methods; orthographic, developed, oblique, isometric and diagrammatic. Pipe bending and shop fabrication methods. Piping detail drawing using various techniques, and unit arrangements of manifolds, bypasses, drains and instrumentation connections. Selection of materials and equipment from catalogues. Pipe supports and hangers. Expansion joints and simple flexibility problems. Pipe insulation.

ENDR 105 / Technical Drawing

Equipment, instruments and materials. Pencil technique, lettering, geometrical constructions. Orthographic projection. Pictorial drawing; oblique, isometric. Dimensioning; fractions, decimals, Ford Rule, dimensioning systems. Freehand drawing; orthographic, isometric, proportions, notes. Sectional views; full, half, offset. Section lining, conventions. Auxiliary views; primary and secondary. Fasteners; threads, threaded products, terminology, symbols, rivets, keys, welding, brazing. Pipe fittings and valves; types of fittings, piping drawings, symbols. Assembly drawing; sectional views, exploded assemblies, bills of material. Detail working drawings; surface finish, tolerances, manufacturing methods. Cams; motion, displacement diagrams, cam profiles. Gears; principle types, terminology, manufacturing. Developments; basic descriptive geometry, parallel and radial line developments. Electrical and electronic drawings; symbols, wiring diagrams, instrumentation symbology, block diagram, printed circuits.

ENGINEERING DRAFTING - Cont'd.

ENDR 115 / Structural Drafting

Interpretation and preparation of design drawings for structural steel and reinforced concrete structures. Detail drawings of steel beams, columns. Design of bolted and welded framed connections. Design drawings and bar lists for reinforced concrete foundations, beams, columns, floor slabs and walls.

ENDR 118 / Descriptive Geometry I

Orthographic projection, primary and secondary auxiliary views. Basic descriptive geometric principles, points, lines, planes, true lengths and true shapes found by auxiliary views and by revolution, skew lines, piercing point of a line and a plane. Development of surfaces by parallel line, radial line and triangulation methods. Pattern drawing for sheet metal and plate fabrication, seam allowances, bends, materials and production methods. Welding symbols, welding drawings, structural shapes and bills of material.

ENDR 119 / Technical Drawing

Review of drafting equipment and instruments, their use, selection and care. Review of geometrical constructions, and terminology. Orthographic projection, principal views, pencil techniques, alphabet of lines and basic dimensioning. Visualization problems involving missing lines and missing views. Principal views in alternate positions. Advanced detail working drawings. Sectional views; full, half, offset, removed, and revolved. Conventional practices and section lining symbols. Small tool operations, surface finish, tolerances, dimensioning problems, specifications and notes on drawings. The SAE numbering system for steels. Technical freehand sketchings. Welding drawings. Standard welding symbols as authorized by the Canadian Welding Society. Assembly drawings, bills of material and estimating. Manufacturing processes. Heat treatment of steels. Electrical and electronic symbols, circuit diagrams and schematic diagrams. Symbols for pipe fitting and valves. Piping standards and specifications. Piping drawings. Isometric drawing and freehand sketching. The study of industrial blueprints and specifications.

ENDR 123 / Engineering Drawing & Design

Freehand sketching and machine drafting of various flow diagrams and plant layouts, utilizing standard and specially designed materials; handling equipment as used in industry.

ENDR 137 / Applied Drawing

Standard drafting equipment, use and care of instruments, terminology, basic geometric constructions. Third angle orthographic projections using the principal views. Drawings of mechanical parts, lettering, basic dimensioning principles. Freehand engineering sketches. Auxiliary views. Principal types of sectional views, conventions, and standards. Pictorial drawing using the oblique and isometric systems. Piping drawings and sketches. Piping symbols. Reading of blueprints, conventional practices, standard abbreviations, specification, material lists. Electrical and electronic symbols.

ENGINEERING DRAFTING - Cont'd.

ENDR 158 / Drafting & Design

Drafting equipment and instruments, geometrical constructions in common use, one view scale drawings, linework, freehand lettering, orthographic drawings of machine parts, sectional views and auxiliary views, conventional drawing practices, dimensioning of detail parts for manufacture, notes on drawings, machining terms, specifications, pictorial drawings.

ENDR 200 / Applied Drawing

Pipe fittings and valves, piping drawings, flow diagrams, instrument symbology, electrical and electronic drawings, symbols, schematic, block diagrams, printed circuits, cams, motion, displacement diagrams, profiles. Gears, principal types, terminology.

ENDR 201 / Drawing & Product Design

Detail working drawings of an advanced nature. Design layout drawings drawn from engineering information and specifications. Projects involving various types of bearings, cams and gearing. Use of manufacturers' catalogues, standard parts, and engineering reference books. Manufacturing tolerances, allowances, machine fits and dimensioning systems as related to product design and manufacturing methods. Application of machine components including linkages, toggles, levels, eccentrics. Design principles and applications of basic gauges such as snap, plug. General design principles of jigs and fixtures. Application of commonly sued jigs such as drill, plate, etc., and application of machine fixtures. Basic principles and applications of structural drawing. Checking drawings SAE codes and official specifications.

ENDR 204 / Design & Layout of Piping Systems

Arrangement of piping systems for steam, water, gas, oil, chemicals, using conventional layouts and interpretation of the relevant codes. Layout of equipment, pressure vessels and related piping in terms of efficient flow conditions, and clearance from structural features. Flexibility studies and arrangement of hangers, guides and anchors. Pipe sizing, and pressure drop calculations. Special applications for control valves. Study of common operations, feed heating, condensing, evaporation. Estimation of piping costs. Visit to industrial piping installations.

ENDR 207 / Kinematics (Graphical)

Techniques of mechanism analysis. Displacement (linear, angular); paths of points on rotatint bodies, producing specific paths. Linkages; to produce a given path, basic four bar, crank and slider, quick return, reverse, slow motion. Graphic analysis of motion velocity and acceleration, gear trains, cams.

ENGINEERING DRAFTING - Cont'd.

ENDR 212 / Plant Layout & Handling Systems

Review of drafting procedures. History of materials handling. Flow diagrams of various systems, use of symbols, relevant catalogue data and flow process charts. Conveying and elevating materials utilizing belt conveyors, apron conveyors, screw conveyors, bucket elevators, circular carries and flight conveyors. Bulk materials handling involving unloading, storage, feeding and reclaiming. Feeding of materials by vibrating feeders, screw feeders, mechanical vibrating feeders, reciprocating feeders, bar flight and rotary vane conveyors. Parts and packaging handling utilizing chain conveyors, pusher chain conveyors, slat conveyors, overhead conveyors, monorail conveyors, arm conveyors and suspended conveyors. Horizontal movement of materials - non-fixed paths using jack lifts, trail trains, platform trucks, straddle carriers and fork lift trucks. Warehouse activities. Railroad and truck handling. Air cargo handling. Handling of heavy equipment involving hoists, jib cranes and overhead cranes. The student will be encouraged to design plant layouts using the listed types of conveyors. He will also design and draw complete single conveyor layouts e.g., the belt conveyor - selection of pulleys, lagging, hubs, motor horse power and motor size, belt tension, belt construction, pulley load ratings, take up blocks and bearing blocks. A Thorough understanding of engineering materials handling catalogues will be stressed.

ENDR 213 / Technical Drawing

Application of linkages, levers and cams in various mechanisms; engineering catalogue reference and selection of bearings, materials and basic jig and tool components; assembly drawings and bill of materials.

ENDR 222 / Descriptive Geometry II

Principles and applications involving oblique surfaces. Lines and points in oblique planes. Location of plane figures in oblique planes. Intersections of lines and planes, oblique lines, oblique plane and polyhedron. Dihedral angles. The system of revolution for finding true length of oblique lines, true shape of oblique planes, dihedral angles. Use of counter revolution. Developmentof surfaces and intersected polyhedrons by triangulation. Pattern and development of drawings, bend allowances, semas, and methods of joining. Single curved surfaces. Development of transition pieces. Double curved surfaces. Contoured surfaces and practical applications such as ships' sheer drawings. Problems which pertain to a wide range of general machine and mechanical industries.

ENDR 225 / Materials & Processes

Study of piping and valve materials, with reference to A.S.T.M. specifications and codes. Welding types and methods. Welding symbols and design considerations. Processes used in food, drug and petro-chemical industries. Principles of energy systems, atomic, fossil-fuelled, and hydraulic pollution control systems. Visits to industrial plant and utilities.

ENGINEERING DRAFTING - Cont'd.

ENDR 270 / Drafting & Blueprint Reading

Alphabet of lines. Orthographic multiview projection. Dimensions and notes, tolerances and fits. Screw threads and fasteners. Sections and auxiliary views, pictorial views. Freehand sketching and machine drafting.

ENDR 271 / Plate & Structural Layout

Drafting equipment; selction, use and care. Basic geometrical constructions and terminology. Review of orthographic projection. Primary and secondary auxiliary views. Dimensioning problems and methods. Parallel lines and radial line developments. Basic descriptive geometry principles; true length of lines, true shape of planes, true angles, by auxiliary view method. Dihedral angles, revolutions and intersection of planes. Developments by triangulation. Structural shapes, symbols and specifications. Plate size and specifications. Layout and development of plate and structural projects of a practical nature. Bills of material and shop notes.

ENDR 272 / Blueprint Reading

Drafting equipment and instruments, their care and use. Basic geometrical constructions, terminology, pencil techniques, lettering, drawing to scale. Orthographic projection, principal views, alphabet of lines, detail working drawings, dimensioning principles, visualization. Primary and secondary auxiliary views. Freehand technical sketching using the orthographic system. Small tool operations, notes, specifications, tolerances, manufacturing standards. Reading of industrial blueprints of detail parts, removed, revolved, and offset. Section lining symbols and conventions. Structural shapes, symbols and specifications. Bills of material. Reading of industrial sub-assembly and final assembly welding drawings. Isometric drawing of detail and assembly drawings. Isometric freehand technical sketches.

ENDR 273 / Blueprint Reading

Drafting equipment and instruments, their use and care. Basic geometrical constructions, pencil techniques, drawint to scale. Orthographic projection, principal views, alphabet of lines, working drawings. Single auxiliary views. Basic dimensioning principles. Technical freehand sketching using the orthographic system. Small tool operations, notes, and specifications. Study of welding details and industrial drawings. Commonly used welding symbols approved by the Canadian Welding Society. Structrual shapes, specifications and symbols in common use. Print reading of industrial welded sub-assembly and final assembly drawings. Sectional views; full, half, revolved.

ENDR 274 / Drafting & Blueprint Reading

Freehand sketching of simple and complex objects using multi-view, isometric and oblique projections. Blueprint reading; study of methods of representation of objects including ortho-multiview, isometric and oblique projection, dimensions and tolerances, notes and specifications, surface finish, auxiliary views, sections, threads and fasteners, gears and cams, simple developments, detail and assembly drawings, methods of reproduction of drawings.

ENGINEERING DRAFTING - Cont'd.

ENDR 300 / Descriptive Geometry

Plane engineering geometry, using drawing instruments and conventional construction methods; space relationships and the orthographic projection system; view relationships and the use of the reference plane; notation, colours and visibility; single auxiliary views, principal lines and points in space; intersections of oblique planes, planes and lines; the revolution method of solving problems; development of surfaces, using parallel line, radial line and triangulation methods; intersection of solids; sheet metal drawing practices.

ENDR 351 / Materials Handling

Problems working in orthographic projection, involving view selection, scale, drawing size and spacing; a study of the development of materials handling; flow charts and diagrams; case studies involving movements of raw materials, space requirements, manufacturing operations; storage and shipping; storage techniques; horizontal flow of material, air cargo handling; selection of standard components and equipment from manufacturers catalogues; layout of various materials handling systems; plant layout and materials flow; safety codes and maintenance requirements.

ENDR 400 / Process Piping

Piping: classifications, size and specifications, fittings, and materials; joining methods. Types of valves, uses, methods of operation, design features, special applications. Piping diagrams; single line, double line, orthographic and isometric. Schematic diagrams and flow diagrams. Problems involving developments and intersections for fabricated parts. Conventional practices. Pipe and equipment layouts and general arrangement drawings.

ENDR 451 / Methods, Tooling & Materials

Manufacturing company organization, production control, expediting. Mass production techniques. A study involving the capabilities and capacities of standard machine tools. Tooling department organization. Jigs: types, design features, design and detail drawings. Fixtures: types, design features, locating and clamping principles, design and detail drawings. Dimensioning methods and conventions. Use of standard parts catalogues. Designing for specific components. Steel: S.A.E. numbering system, steel characteristics and the use of steel alloys. Heat treatment. Non-ferrous metals. Plastics and fibrous materials.

ENGINEERING DRAFTING - Cont'd.

ENDR 452 / Manufacturing Processes

A study of the factors which determine the selection of manufacturing processes. Casting processes; sand, permanent mould, injection. The forging process. Hot working and cold working, adhesives, powdered metallurgy. Plastics, thermoplastic and thermoset; materials, fundamental characteristics, principles of main processes, design considerations, selection of materials, production methods and techniques. Welding: welding processes and their applications to product design, production techniques, and materials. Heat treatment of steels. Production machine tools. Automatic machine tools used for thread cutting, gear and cam production, computer control of machine tools. Sheet metal and heavy plate fabrication. Design and cost factors of production. Inspection and quality control. Assembly and testing. Visits to manufacturing plants and industrial organizations will form a comprehensive part of this course.

ENDR 500 / Jig Fixture Design I

Freehand sketching and machine drafting of basic jig and fixture designs, emphasizing current production methods and organizations.

ENDR 501 / Jig Fixture Design II

Freehand sketching and machine drafting of advanced jig and fixture designs, emphasizing current production methods and organization.

ENDR 502 / Jig Fixture Design III

Freehand sketching and machine drafting of assembly and welding jigs and fixtures and welding fixtures, emphasizing current production methods and organization.

ENDR 503 / Jig Fixture Design IV

Freehand sketching and machine drafting of cutting tool design, multi-tool layouts and gauge design emphasizing current production methods and organization.

ENDR 504 / Design of Jigs & Fixtures

Freehand sketching and machine drafting of various jigs, fixtures, and other tools used in large scale manufacturing.

ENDR 520 / Die Design

Freehand sketching and machine drafting of basic blanking, piercing and cut-off and bending dies.

ENDR 521 / Die Design II

Freehand sketching and machine drafting of advanced blanking, piercing and bending dies. Introduction to basic draw dies.

ENGINEERING DRAFTING - Cont'd.

ENDR 522 / Die Design III

Freehand sketching and machine drafting of advanced draw dies and complex blank, pierce and bend progressive dies.

ENDR 523 / Tool Design Theory

Manufacturing engineering organization: cutting tool design, form tools, process planning, turret lathe, tooling layouts, automatic lathes, location and clamping theory, drill jib and fixture principles, broach design, gauges, presswork, tooling economics.

ENDR 524 / Die Design

Freehand sketching and machine drafting of basic blanking, piercing, cut-off, bending, draw and progressive dies.

ENDR 551 / Industrial Engineering

The selection of process of manufacture and case histories of materials handling, plant layout, product flow, cost analysis and maintenance requirements; the selection of equipment from engineering catalogues.

ENGLISH

ENG 100 / Language & Communication

Semester I - Oral and written communication. The development of clear, concise, well organized communication with specific application to technical writing and oral presentations. Assigned readings.

Semester II - Contemporary ideas. A study of modern literature and current issues. Written and oral presentations.

ENG 101 / English

Precis writing, technical description, current reading, reading for enjoyment, reading for information.

ENG 103 / English

Business communications: effective expression of ideas. Business correspondence. Technical writing; the technical report.

ENG 104 / English

Vocabulary and spelling; punctuation; written business communication; report writing; oral communication; literature and periodicals.

ENGLISH - Cont'd.

ENG 110 / Language & Communication

English composition; effective English in business communication; rapid reading and comprehension; business letter writing; letters of application, sales promotion, credit, and collection; oral reports; novels.

ENG 111 / Language & Communication

Oral and written business communication: preparation and delivery of formal and informal speeches on related subjects, the precis, technical research report writing, using library research. A study of an anthology of modern short stories.

ENG 121 / English

Semester I - Oral and written communication: remedial and developmental. Technical writing and reports. Assigned reading.

Semester II - Business communications: effective expression of ideas. Business correspondence. Assigned reading.

ENG 130 / Language & Communication

Semester I - Improvement in reading and studying; reading for details, main ideas and comprehension; summarizing information, making notes.

Semester II - Oral and written expression; develop effective structure and style; technical writing.

ENG 131 / English For New Canadians

The emphasis in the course will be on oral and written work in English which attempts to overcome the problems faced by students whose native language is not English. Individual instruction will be emphasized, plus assignments to develop confidence and speed in speech, writing, and reading.

ENG 132 / Language & Business Correspondence

Semester I - Basic English grammar and Composition, vocabulary of trade, spelling, pronunciation and use of trade terms. Use of dictionary, library. Sentence structure and paragraph structure. Reading for comprehension.

Semester II - Business Correspondence: Study of various types of the business letter anf forms. Practice in writing and answering business letters applicable to trade. Preparation of business forms. Reading for comprehension.

ENGLISH - Cont'd.

ENG 141 / Language & Communication

Understanding words: Use of dictionary, building words, signs and slogans, choice of words. Sentence structure; qualities of good sentence, expression of ideas. Paragraph structure; logic, clarity, relevance, progression of ideas. Communication; precis writing, reading for comprehension, the technical report, business correspondence, oral presentations.

ENG 142 / Language & Communication

Development of reading skills; oral expression; written expression; word study; sentence formation; punctuation; developmental reading and writing.

ENG 143 / Language & Communication

Semester III - Spelling, vocabulary, reading, parts of speech, sentence analysis, discussions.

Semester IV - The elements of short story; meaning and use of words, sentence errors, paragraph writing, descriptive, narrative and expository writing, discussions, debates, developmental reading.

ENG 146 / Language & Communication

Semester I - Dictionary usage, grammar, vocabulary, paragraph wriring, punctuation, developmental reading, oral communication, business letters.

Semester II - Business correspondence, technical vocabulary short essay writing, logic and argument, summary writing, sentence variety, punctuation, oral communication, novels and plays.

ENG 147 / Language & Communication

Semester I - Scientific writing; study of mass media; logic and argument; essays and reports; grammar and punctuation; assigned scientific and technical readings; vocabulary, literature, oral communication.

Semester II - Business letters; technical and scientific reports; essay writing; discussions; literature; developmental reading; oral communication.

ENG 148 / Language & Communication

Semester I - Business letters: vocabulary; oral and written reports; essays; reading for comprehension and speed; grammar; punctuation; logic and argument; communication skills.

Semester II - Business letters, memorandums, reports, oral communication, reading for comprehension and speed, evaluation of current media; current issues, research projects.

ENGLISH - Cont'd.

ENG 149 / Business English

Semester I - Grammar; punctuation; vocabulary; business correpondence; business letters; memorandums, reports, oral communications.

Semester II - Business letters, memorandums, reports, punctuation, business vocabulary, oral communications, interviews, telephone technique, developmental reading, discussions and debates.

ENG 156 / Language & Communication

Personal and general business correspondence; summary writing; reading; logic and argument; business vocabulary; oral communications, grammar, punctuation, telephone techniques.

ENG 200 / Language & Communication

Semester I - The preparation and delivery of formal talks and lectures on technical subjects. The philosophy of good writing. Assigned reading.

Semester II - Technical research; study of basic library resources used in research. The technical report; organization and format. Assigned reading.

Note: Under certain circumstances a suitable combination of two courses selected from the section Elective (Liberal) Studies and/or Eng. 212, Eng. 213, Eng. 214, may be taken in lieu of Eng. 200.

ENG 201 / English

Mass media; technique of criticism; qualities of leadership; impact of automation; oral communication in business.

ENG 203 / Canadian Literature

The students will be given an understanding of the environmental and historical factors which have affected Canadian literature: to show the distinctive characteristics of Canadian literature; and also to develop an appreciate of Canadian literature.

ENG 204 / English

Vocabulary and spelling; punctuation; written business communication; report writing; oral communication; literature and periodicals.

ENG 210 / Communication

A study of different aspects of report writing. Oral presentation of topics related to food management. Special attention will be paid to the positive approach to business communications. One novel or play may be studied.

ENGLISH - Cont'd.

ENG 212 / Communication

A study of the different aspects of report writing and business correspondence. The study will include the effective expression of ideas, the psychology of communication, and the conduct of business meetings.

ENG 213 / Oral Communications

Basic information about the speech process, impromptu speeches, formal speeches and debates. Through practice and self-evaluation students will develop sufficient confidence and poise to speak effectively in most situations. Practice will be given in the techniques of the various discussion patterns used in instructional situations.

ENG 214 / Communication Skills

A developmental program using a variety of material and techniques, including a diagnostic analysis. The program is based on intensive individual instruction in a Language Centre. The course is designed to meet individual requirements in reading, writing, speaking and listening.

ENG 215 / Advanced Communication Skills

The techniques of contemporary language communications involving the study of mass media communication. An examination of the tec-niques employed in film-making and the theatre arts.

ENG 232 / Technical Writing & Oral Communication

Semester I - Study of trade journal, correct method of technical description. Precis writing as applied to trade journals. Original reports on technical subjects.

Semester II - Study of public speaking. Preparation and delivery of formal and informal speeches in class. Conduct of business meetings. Assigned reading for comprehension.

ENG 232 / Business Communication

Semester I - Advanced forms of business writing: employee regulations from communication standpoint. Further work in public speaking.

Semester II - Correct writing of advertising letters and brochures. Dealing with the public in written transactions. Professional organizations: conduct of meetings, minutes of meetings, records and bulletins. Assigned reading for comprehension.

ELECTIVE STUDIES

ES 143 / Canadian Studies

Semester I - Geographical setting of Canada, geographic regions, provinces, climate, resources, industry, and people.

Semester II - Canadian history from discovery to the present; relations with the U.S.A., the Commonwealth, the world; Canadian Constitution, monarchy, parliment, federal system, democratic processes; federal, provincial and municipal governments.

ES 146 / Social Studies

Semester III - Family and personal finances, employment, cultural activities, education, freedoms, rights, responsibilities, social agencies, insurance, pensions, welfare and social security.

Semester IV - Ontario law related to buying and renting living accommodation, owning a car, wills, estates, borrowing and lending money, investing, taxation, business practices.

ES 200 / History of Ideas in Western Civilization

This course allows the student to examine the history of ideas in Western civilization. In order to contribute to his society more fully, the prospective graduate of a technician program should be competant not only in his chosen vocational field, but also in the appreciation of the attitudes, values, and ideals of his society.

ES 201 / History of Science & Technology

A study of the historical and philosophical developments leading to the "Scientific Method" of examination of the universe; the sociological impact of technological changes; an assessment of the technicians role in technology and his social responsibilities regarding the use of technology.

ES 203 / Human Relations Applied to Industry

Understanding ourselves; understanding ourselves in relation to others; human needs in industry; personnel selection and training; supervision; leadership; working conditions; job satisfaction, labour-management relations.

ES 205 / Perspectives on Man & Society

A study of 20th Centure literature chosen to develop understanding and insight into present day society. Emphasis will be placed on free discussion in order to encourage students to develop effective expression of their own opinions. Writing assignments will stress original reactions to material studied.

ES 211 / Twentieth Century Thought & Current Issues

The student will examine the arguments relation to controversial issues and write assignments on selected contemporary writings. Topics may include; poverty, war, racism, the French-English conflict in Canada and the Indian Problem.

ELECTIVE STUDIES - Cont'd.

ES 215 / Political Science (Economics)

Internal and international trade: Canada's history in world and domestic markets from early colonial days to her present position.

ES 216 / Political Science (Politics)

Political concepts and practices applicable to Canada; historical background, geographical and political divisions, federalism, legislative processes, provincial and municipal government, internal policy, foreigh policies, etc.

FABRIC TECHNOLOGY

FAB 150

Characteristics of fabrics requiring special knowledge re sewing, ironing, pressing, packing, molding, etc.

FAB 150

The selection of the right thread with the right needle at the right time; stitches, etc., for various fabrics, etc.

FITNESS

FIT 100A

Statistics and measurement, procedures are studied and sub maximal fitness tests are examined.

FIT 101A

The first of a two semester lecture and laboratory course in Gross Human Anatomy. This section includes a detailed study of the skeleton, upper limbs, thorax, abdomen, pelvis, and perineum.

FIT 102

Psychology of Exercise studies the components involved in total fitness and how they (social, emotional and physical) interact.

FIT 100B

A followup to Fitness 100A involving more elaborate testing. Skinfolds, strength testing, cardiovascular testing, and an introduction to gas analysis are studied.

FITNESS - Cont'd.

FIT 101B

The second part of a two semester lecture and laboratory course in Gross Human Anatomy. Included in this portion is a detailed study of the skeleton, lower limbs, head, neck and central nervous system.

FIT 103

Effects of physical activity on the muscular, circulatory and respiratory systems of the human body are studied.

FIT 200A

The students will work in a related area to gain practical experience in fitness programming. Clinical internship involves the study of different types of exercises, methods, and actual programming for specific fitness.

FIT 200B

An indepth study of submaximal, complex testing, and actual fitness programming based on test results.

FIT 204A

Physical work capacity, metabolic and environmental aspects of exercise, fatigue, training, and conditioning for human activities are studied.

FIT 204B

Critical discussion of designing fitness programs based on actual tests.

FIT 205

Business administration procedures involved in planning and maintenance of fitness programmes and fitness facility planning and operation.

FIT 300 (Optional)

A more indepth follow-up to Fitness 205 involving the business aspects of fitness agencies such as accounting and office management.

FIT 302

The students will spend 10 hours a week out in the field setting up programs based on tested results.

FIT 304

Work capacity in relation to age and sex will be examined.

FOOD PREPARATION

FP 100 / Food Preparation I & II

The student is introduced to basic cooking by preparing basic stocks, soups and sauces followed by preparation of vegetables, rice, pasta products, egg dishes and the usage of basic flavourings, herbs and spices. Extensive instruction is given on the cooking of seafood, meats and poultry, and practice in the preparation of these dishes is arranged.

FP 203 / Convenience Foods

A study of the influence of consumer demands in establishing the gross parameters of research and development in the industry. Explanation and study to do with the manufacture and packaging techniques used in the fabrication of convenience foods. Quality testing, improvement and convenience requirements.

FOOD TECHNOLOGY

FT 100 / Food Products & Standards

Food products which are available to, and commonly used in, the hospitality industry are classified and discussed in specific groups as to their grades, sizes, availability, marketing methods, standard containers, and quality factors; vegetables, fruit, dairy products, cereals, beverages, poultry, fish, shellfish and meats.

FUR TECHNOLOGY

FUR 143 / Theory & Recognition of Furs

Familiarization with more than seventy different furs of ten families in all their mutant, processed and dyed forms; parts and uses of various pelts; raw and dressed furs and the processing of one into the other; wild furs and bred furs and their differences by section, genetics, and food; introduction to the profitable breeding of fur-bearing animals; care and maintenance of fur pelts and garments, including storage, cleaning, repairs, fur insurance, handling; some Canadian history as it evolves from fur trading. Recognition labs and plant visits.

FUR 144 / Fur Manufacturing

Care and operation of tools; selection of factory materials and sources of supply; introductory fur matching and selection of pelts for garments; preparation for cutting; introductory cutting and slicing; introductory operating and machine sewing; blocking and nailing to pattern up to the finished article; study of textiles used in fur factory; detailed study of six of ten fur families used in industry, including techniques of manufacture; making of fur hats, collars, ascots, vests, novelties, etc.

FUR TECHNOLOGY - Cont'd.

FUR 145 / Fur Fashions

History of fur fashions and fads from the caveman; introductory fur design, introduction to fitting, altering, sizing fur garments and paper patterns for fur styles with reference to advanced work in special measurements, creativity, copying, field visits, and observation. Students will each make:
Men - Fur hat (wedge type) and fur vest;
Women - Fur hat (Pillbox type) and fur ascot.

FUR 146

A special module covering the recognition of different furs and how they are described for selling purposes - consumer education re fur and fashion.

FUR 147 / Fur Marketing

Dicussion of trapping by Indians, Eskimos, other Canadians; handling of raw pelts at source; collectors; fur skin dealers; fur auction sales; international markets; royalties, duties, taxes, fur ranchers (farmers); purchasing by manufacturer; distribution by manufacturer of finished garments; showings and fashion shows; fur retailing by department stores, fur stores, custom furriers, ready-to-wear stores; fur advertising and promotion; fur public relations and business ethics. Field visits and shows.

GRAPHIC DESIGN

GD 100 / Foundation Drawing

The student will do still life drawing in line and then add shading. The student will sketch local houses in the area using various drawing techniques.

GD 101 / Life Drawing

Starting near end of the first semester, contour and line drawings are applied to life drawing. Quick gesture and action poses are emphasized. A completely finished rendering of the life figure drawing in large size is required near the end of the coursa.

GD 102 / Alphabet Lettering

The student will be asked to draw skeleton lettering in pencil using the basic Roman proportions. They will then render this using manuscript pen nib. The students will learn how to draw Roman lettering, and how to identify type faces and measure type.

GRAPHIC DESIGN - Cont'd.

GD 103 / Foundation Design

The students will be taught two dimensional design in which a frame of reference will be used, and they will be asked to use geometric and free shapes, arranging these shapes in a way to produce contrast to size, value and textures. They will also do three dimensional designs using paper and cardboard, and will produce some basic advertising layouts.

GD 104 / Foundation Colour

The students will make an extensive study of the Munsell Colour System, drawing a colour sheel and producing various colour combinations using the Munsell System. They will also be asked to design colour value expercises.

GD 105 / Foundation Techniques

The students will use the material at the Royal Ontario Museum as the basis of the technique classes. They will be asked to apply various techniques to objects of art at the Museum, e.g., pen and ink, wash, tempera, acrylic, conte.

GD 106 / Foundation Mechanicals

The student will be taught how to use drafting sets to produce finished mechanical drawings, and the basic uses of amberlith overlays.

GD 107 / Foundation History of Art

The students will be taught the basic history of art and how it relates to our present graphic design situation, so that they may use some of these ideas to relat to today's advertising art.

GD 201 / Illustration

The students will be asked to do several decorative illustrations in the art nouveau technique and any other technique which he may develop on his own.

GD 202 / Abstract Design

The student will be encouraged to give free ranged to his abstract capabilities in work in the field of free design.

GD 203 / Graphic Design

The student will be asked to produce some specific graphic design and to supply some of his own projects.

GD 204 / Print Making (Screen)

The basic techniques of screen printing are covered and the student encouraged to develop his abilities in using the technique for art work. Techniques include hand-cut and photoscreening techniques as well as press operation.

GRAPHIC DESIGN - Cont'd.

GD 205 / Graphic Techniques (T.V.)

The student will produce layouts for program titles, commercials and interludes.

GD 206 / Graphic Mechanicals

This will be an exercise in producing the finished working drawings of projects designed in the graphic design period. It will entail overlays and key-line drawings, to produce a camera ready piece of art work.

GD 207 / Historical Research

This will be a course of History of Art in which the Bauhaus School will be thoroughly studied and related to modern advertising trends and layout trends. The Art Nouveau trend will also be researched and its connection with modern advertising will be carefully studied.

GD 208 / Packaging Mechanicals

This will be an exercise in producing a finished camera ready piece of art work for each package design produced.

GD 209 / Life Painting & Drawing

The students will learn to develop abstract paintings. Some will be from graphic design approach - others will be an abstract of the model. Both realistic and abstract forms of painting will be developed.

GD 210 / Packaging Design

The student will be asked to design some packages and may have the option of selecting other package designs they wish to work on.

GRAPHIC ARTS

GR 100 / Layout, Design, Typography

Basic principles of layout, design, and type face selection. Typography in various media; newspapers, books, brochures, advertising, etc. The relationship of typography with other arts. Preparation of mechanicals, illustrations, and display advertising.

GR 101 / Hot Metal Composition

Principles of type composition. Make-up of jobs using hand composition, ludlow, saw, mitering machine and repro-proof press. Job planning including considerations for printing and binding. Development of hot metal machines, their mechanisms, and machine principles. Preventive maintenance and safety regulations. Setting of matter justified, flush left, flush right, centered, leadered work and tabular; proof reading. Typesetting a project, which will be printed.

GRAPHIC ARTS (Continued)

GR 105 / Photomechanical Reproduction

A basic course covering the operation of process cameras. The calibration of process cameras and darkroom equipment for line, fineline and halftone negatives. The application of coloured filters and use of panchromatic film. Making photographic contacts, duplicates, spreads and chokes. The theory of photographic lenses, light sources, film emulsion and processing solutions.

GR 110 / Film Imposition and Printing Surface Preparation

A basic course for black and white and line colour stripping. The course introduces job planning and layout of flats containing line negatives, halftone negatives, line colour negatives and duotones. Imposition is included with the preparation of folded dummies and layout sheets for various types of bookwork. Darkroom techniques for making photographic contact and the exposing and development of presensitized offset plates are an important part of this course.

GR 114 / Machine Printing Letterpress

Press equipment. Heidelberg automatic platen, Model "T" 10" x 15". Heidelberg automatic cylinder 15" x 20 1/2". Course covers safety, housekeeping, lubrication, paper handling, press familiarization, set-up and adjustments, feeder and delivery, imposition, register, packing and makeready, letterpress inks, paper stock, running problems and corrections.

GR 115 / Machine Printing (Basic Offset)

A beginners' course covering the fundamentals of offset lithography, feeding dampening systems (both conventional and alcohol), ink control, and running of one colour, multi-colour and process colour projects. This program leads to GR 116.

GR 116 / Machine Printing (Offset)

Larger single color presses. Good housekeeping and safety, lubrication. Measuring instruments and devices for pressmen. Cylinder arrangements. Dampening system, conventional and with alcohol, inking and register systems. Plate, paper and ink as related to the pressman. Successful operation of a single color press.

GR 125 / Binding and Finishing

Safety. Bindery terminology. Tools. Machinery and materials. Sequence of bindery operations. Job planning. Introduction to auto-spacer and programmed cutting. Drilling. Round cornering. Introduction to Baum folding machines. Gold stamping. Stitching and basic hand binding.

GRAPHIC ARTS (Continued)

GR 202 / Photocomposition

Good housekeeping and preventive maintenance. Operating principles of Photon Textmaster 713-20, and Photon Keycomp 10, Linofilm "Quick" and Mergenthaler VIP, film strip, optics and escapement: memory programming, tape codes, test panel. Operation of Compugraphic (7200) displav. Generation of raw tape.

GR 205 / Photomechanical Reproduction

An advanced course in halftone photography and machine processing. Includes the operation, maintenance and control of film processors, use of reflection and transmission densitometers. The calibration of various types of contact screens to camera and processing conditions. Making duotones and other techniques. An introduction to colour separation procedures.

GR 210 / Film Imposition and Printing Surface Preparation

Advanced techniques in black and white, line colour and four colour process stripping are introduced. Also included are: contact work and making spreads and chokes, the preparation of various types of offset litho-graphic plates, step and repeat methods and an introduction to the programming and operation of a photocomposing machine.

GR 214 / Machine Printing Flexography

Press equipment is a two-unit "Lembo" flexopress. Course covers safety, housekeeping, lubrication, roll feed and web tension, the printing unit, flexographic process, services on press of air, water, gas and electrical controls, oven drying, roll rewind, circulating pump for inking system, flexo inks and their compatible solvents, ink viscosity measurements, rubber plates, anilox rolls, ink metering system, position and register, substrates, running problems and corrections.

GR 215 / Machine Printing Rotogravure

Press equipment is a two-unit "Lembo" rotopress. Course covers safety, housekeeping, lubrication, roll feed and web tension, the printing unit, rotogravure process, services on press of air, water, gas and electrical controls, oven drying, roll rewind, circulating pump for inking system, roto inks and compatible solvents, ink viscosity measurements, doctor blade finishing, position register, substrates, running problems and corrections.

GRAPHIC ARTS - Cont'd.

GR 216 / Machine Printing (Offset Intermediate) Single Colour

Offset lithography on single colour Heidelberg, Harris and Miehle Presses at the Intermediate level. Course content emphasizes color matching and projects. Projects run during this course will include one colour, multi-colour and process work.

GR 217 / Machine Printing (Offset - Intermediate) Two Colour

Offset lithography on two-colour Harris and Miehle Presses. Fundamentals of two-colour offset lithography, feeding, inking systems, dampening systems, (conventional and alcohol), press familiarization, theory and practical application of two-colour offset printing. This course leads to advanced pressmanship.

GR 220 / Quality Control

Paper and board manufacture. Quality assurance tests for printability and runnability of coated and uncoated paper and board for Letterpress, offset, flexography and rotogravure. Formulation of inks and their properties as related to each major printing method. Procedures and tests to obtain optimum print quality through the combination of a particular type of ink, paper and the method of printing.

GR 225 / Binding & Finishing

Rebinding. Intermediate folding. Introduction to Smyth #12 booksewer. Roto binder. Muller gathering machine. Muller automatic stitcher. General bindery operations.

GR 300 / Design & Layout

A review of basic typographic design principles and copyfitting problems followed by production of comprehensive layouts, some of which are used in the later typesetting course. Assignments will involve the designing of a set of business stationery, a six page brochure; and, a number of tabular items. Each student will be required to formulate a house style in keeping with current trends.

GR 301 / Computer Peripherals & Typesetting

The main object of this course is to develop the ability to apply computers to typesetting. It will involve the basic terminology of the computer field and discussions of both general purpose and special purpose devices as they are used in composition. Topics include hardware, software, storage, programing, limitations, advantages and disadvantages of input and output machines in typesetting, and a survey of the field.

GRAPHIC ARTS - Cont'd.

GR 302 / Paste-Up & Film Assembly

Paste-up is taught at the beginning of this course but the emphasis is on the assembly of positive film. Two-colour forms are assembled using a register pin system and mylar base. The level of work reaches that of the leading typesetting houses. In addition, a contact printing and headlining is taught.

GR 303 / Tape Input

Input will be by raw tape perforator, programmable keyboard, and counting keyboard. Correction will be by CRT terminal. In the counting keyboard session comparisons will be made to the monotype system. Output will be Photon 713-10/20, Mergathaler VIP, and Linofilm Quick. A high standard of accuracy is demanded of students and the leve of work will be in the order of tabular, shape, and catalogue typesetting. The final part of this course will be programming.

GR 304 / Cold Type Mark-Up

This course is to introduce students to various methods of mark-up currently in use. It begins with hot-metal mark-up and then progresses to cold-type mark-up the course culminating in mark-up for computer typesetting. The kind of difficulties experienced in the use of different output units will be discussed. Students will be encouraged to develop a mark-up system of their own.

GR 305 / Photomechanical Reproduction

A course designed for students with line and halftone experience. Covers direct and indirect colour separation procedures by various methods. Colour correction by photographic masking. Basic colour thoery. Making screened positives and contrast control, using CC filters. Includes the operation and control of film processors, densitometers, enlarger and related equipment.

GR 306 / Photomechanical Reproduction

Covers the study of tone reproduction for black and white and colour printing. The manipulation of tones taking into consideration the characteristics of the press, paper, plate, film and processing conditions and the copy to achieve quality reproduction on the printed sheet. Practical application of tone reproduction study suing camera, enlarger, contacting and electronic scanning.

GR 307 / Photomechanical Reproduction - Gravure

Introduction to reproduction for the gravure printing process including making of continuous tone negatives and positives, halftone negatives and positives with the gravure screen for monotone printing. Transparency masking and colour separation procedures, continuous tone and screened negatives and positives for colour. Use of carbon tissue in transferring the image to copper, etching the copper and proofing resulting plates.

GRAPHIC ARTS - Cont'd.

GR 310 / Film Imposition & Printing Surface Preparation

The emphasis at this level is on four colour process stripping procedures including the preparation of flats containing chokes and spreads, fake colour and colour separation. Colour charts are prepared by the student incorporating the various screen angles and tints. Further experience will be gained in manual step and repeat methods and machine photocomposing.

GR 311 / Film Imposition & Printing Surface Preparation

This course provides for the practical application of all previous courses on this subject in the areas of contacting, stripping, photocomposing and job planning. It will also include platemaking problems and their solution and pre-press colour proofing methods.

GR 312 / Film Imposition & Printing Surface Preparation

This is a combination of camera, stripping and platemaking that allows the student a number of choices that include completing a project through camera, stripping and platemaking, or performing practical work in any one or more of these areas.

GR 314 / Die Cutting & Embossing

Following a refresher or instruction on platen and cylinder press as required, the course will cover die manufacturing processes; die-cutting and creasing; perforation slot cutting; plate sinking; hot and cold embossing and a demonstration of foil stamping.

GR 316 / Machine Printing Two-Colour Offset Press (Advanced)

Register, cylinder arrangements, application of Ph, pressroom chemistry, paper, ink, colour matching and densitometer application. Projects run during this course will include two-colour, multi-colour and process colour work.

GR 317 / Machine Printing Rotogravure (Advanced)

Exercises in two-colour rotogravure printing.

GR 318 / Machine Printing Flexo (Advanced)

Projects in flexographic printing on various substrates.

GR 319 & 320 / Machine Printing Practice (Offset) Special Projects

Special individual printing projects selected in cooperation by the student and instructor to develop the student's capability on particular presses. Special attention will be paid to colour control and all aspects of importance in commercial work.

GRAPHIC ARTS - Cont'd.

GR 325 / Binding & Finishing (Major)

Advanced training in any three of the following: cutting, folding, adhesive binding, automatic stitcher, Smyth book sewer. This course will include as much touble shooting as time permits. It covers six blocks of training in third year.

GR 326 / Binding & Finishing (Minor)

Two technical blocks covering selected portions of work described in Course GR325.

GR 335 / Operation & Maintenance of Phototypesetting Equipment

This course teachers routine maintenance of Photon and VIP output units. In addition there will be instruction in the operation of basic logic units such as nand gates, and binary counters. Time will be spent on reading the normal documentation supplied with these machines and each student will be allowed hands-on experience in lens cleaning, film strip cleaning, processor maintenance and tracking down faults in logic circuitry. In addition, experience will be given in the rewriting of program tapes used in the Photon 713-10/20.

HEALTH

HEAL 100

A study of current issues pertaining to health and fitness. The ability to research and evaluate current studies will be developed.

HEAL 101

Metabolism of carbohydrates, lipids, proteins, hormones and vitamins in humans will be studied. A special emphasis will be placed on diets for certain physiological conditions. Involves energy costs, nutrition and physical performance.

HEAL 200

Compare present ongoing programs in industry.

HEAL 201

Remedial therapy and exercise is examined. First aid and exercise for specific problems are covered.

HEAL 202

A follow up to Fitness 102. This course will study intensively the major motivational and personality cheories related to fitness and physical activity.

HEAL 206

Each student will work under the direction of a member of the department on an approved research topic on health fitness.

HOTEL INDUSTRY

HIND 100 / Hotel Orientation

History; scope; organization; problems of, and opportunities in, the hospitality industry. Discussions of the organization, the departmental functions, and the opertional difference of various types of hotels.

HIND 101 / Food Orientation

History; scope; organization; problems of, and opportunities in, the food service industry. Discussions of the organization, the departmental functions, and the operational differences of various types of food operations.

HIND 102 / Dietary Orientation

History; scope; organization; problems of, and opportunities in, the health care industry. Discussions of the organization, the departmental functions, and the operational differences of various types of health care operations where diet therapy is a factor.

HIND 103 / Food Cost Control

An extensive study of the two aspects of food cost control; the system/records control and the management of employee production. Purchasing, receiving, storage and issuing controls. Further control through portion standardization, forecasting, use of left-overs, standard recipes and production schedules.

HIND 104 / Menu Planning

The history of menus and their current use as food merchandise catalogue. Planning the well-balanced menu. The classical menu and various menu forms in various food service establishments. The limited, specialty, table d'hote, a la carte and cyclical menu planning. Costing and pricing the menu.

HIND 105 / Accounting I & II

This course will deal with the bookkeeping and accounting functions used in general business, starting with the basic structure of accounting through the debit/credit transaction journals, posting, ledgers, trial balance, work sheets, adjustments and closing entries, profit and loss statements and balance sheets.

HIND 106 / Front Office I & II

The organization of the front desk, its importance to the guest and the hotel. A study of the methods, records and routines used in room reservations, guest registration, cash control and guest charges. Practical instruction on all front office equipment, including the key, mail, information and room racks. Front office salesmanship and psychology. Control of "skippers" and other problem guests through established credit policies. Extensive instruction in night audit procedures, balancing the day's business through the practical use of the N.C.R. 4200.

HOTEL INDUSTRY - Cont'd.

HIND 108 / Beverage Preparation & Service

Bar layout and equipment, history and manufacture of alcoholic beverages, beverage preparation theory, practical preparation of mixed drinks and cocktails. Pre-opening preparation of the bar. Extensive study of wines of the world with emphasis on selection, tasting, and service.

HIND 109 / Automatic Food Merchandising

The growing importance of vending in today's market. Various types, styles, capacities and advantages/disadvantages of various machines. The importance of machine layout. The special preparation, storage and packaging required of vending foods. Inventory and money flow control.

HIND 200 / Hotel Accounting

The function, responsibility and authority of the accounting department. The "Uniform System of Accounts for Hotels". Control of accounts payable, accounts receivable, payroll, daily cash flow, credit and bad debts. Fixed assets, liability and capital accounts. Budgeting and break-even analysis. Operating statements, their use and evaluation.

HIND 201 / Hotel Housekeeping

The organization, location, function and importance of the housekeeping department. Duties of the housekeeper, inspectress, and maid. Purchase specifications, storage and issue control of linen and other supplies. Cleaning of carpets and walls. The equipment, layout and function of the hotel laundry.

HIND 202 / Banquet Management

Organization and functions of the banquet department within food service operations and hotels. The banquet sales office. Types of banquets, their booking, control, planning, set-up and service procedures. The banquet bar. Table arrangements and table settings.

HIND 203 / Food Facilities Layout

Discussion of significant points in the planning process for new or remodelled food service operations, including creation of image, critical flow patch analysis, technical drawings and detail, blueprint readings, selection of equipment and communicating these ideas in an over-all food facility layout plan presentation.

HIND 204 / Human Relations

Introduction to general psychology: perceptions, emotions, motivations, problem-solving, personality, leadership. Human conflict on the job. Job satisfaction. Supervisory techniques in the hospitality industry. Attitudes of staff towards fellow employees and customers.

HOTEL INDUSTRY - Cont'd.

HIND 205 / Dining Room Service

Both theory and practice in dining room set-up and organization, table arrangements, purpose and use of various dishes, glassware and cutlery. Reservation control. French, Russiand and American table service. Taking the order and "selling" the customer. Gueridon cooking and carving of food at the guest's table.

HIND 206 / Hotel Law

A study of the innkeeper-guest relationship, including the responsibilities of the innkeeper, his duty to provide for the safety of his guests, his liability for loss or damage of guest's property, his right of lien and protection against fraudulent practices. The Ontario Innkeeper's Act, Hotel Registration of Guests Act, Tourism and Information Act, Fire Safety Act and Ontario Liquor Licence Act.

HIND 207 / Food Law

A study of Canadian Law as it applies to the food service industry, including the proprietor's responsibilities for his guests and employees, his protection from, and liability in, civil suits. The Liquor Licence Act, the Fire Safety Act and The Public Healrh Act.

HIND 208 / Work Experience

The student is introduced to the reality of the food service and hospitality industry by spending one complete day per week as an on-the-job trainee in either a hotel or food complex. The student is able to relate his classroom instruction to actual operating procedures. Guidance and evaluation is given to each student as to his performance and suitability.

HIND 209 / Restaurant Accounting

The function, responsibility and authority of the accounting department in a food service establishment. The "Uniform System of Accounts for Restaurants". Control of accounts payable, accounts receivable, payroll, daily cash flow, credit and bad debts. Fixed assets, liability and capital accounts. Budgeting and break-even analysis. Operating statements, their use and evaluation.

HIND 210 / Personnel Management

Responsibility for personnel management, types of organizational structures. Establishing job requirements through job analysis, job description, job specification, job classification and job evaluation. The hiring function, recruiting, interviewing and selection. Job performance appraisal. The Human Rights Code and The Employment Standards Act.

HOTEL INDUSTRY - Cont'd.

HIND 211 / Payroll Analysis & Control

Controlling labour costs by a system of forms and procedures, job analysis, work and time schedules, work performance ratios, schedule and sales charts, payroll authorization form. The payroll analysis as a basis for control. The effect of employee morale, absenteeism, turnover and job satisfaction on dollar payroll costs.

HIND 212 / Advertising & Sales Promotion

Analysing the product, competition, market, and financing to determine the marketing mix. The advertising budget and agency. The make-up of an advertisement and its media cost. The sales promotion campaigns to promote room sales, group business, tours, food and beverage sales, conventions and conferences. Publicity, good and bad.

HIND 213 / Belcap

BELCAP - Better Environmental Learning through Computer Assisted Procedures - is the name given to a system which enables food and hotel management students to learn by doing, to test the quality of their decision-making in a simulated hotel/restaurant complex via computer. Computer orientation. Use of terminals and access to data files. Simulated experiements, decisions and changing conditions taken from actual hospitality industry statistics enable the student to project anticipated results by use of the computer.

HIND 214 / Hotel Interior Design

Achieving atmosphere through the use of various furniture period styles, colour schemes, window treatment, wall and floor coverings. Construction specifications for furnishings which determine price. Room decorating and furnishing costs. The guest room layout and floor plan.

HIND 215 / Beverage Cost Control

The two approaches to beverage control, records/systems and employee control. The purchasing, receiving, storing, issuing, and portioning of alcoholic beverages. Pricing the beverage menu and calculating beverage cost percentages. The use of mechanical controls and the potential sales value principle. The beverage department profit and loss statement.

HIND 216 / Management Practice

The student is involved at the department head and management level in the operating of either a hotel or food complex, for two days per week. This allows him/her to implement, under supervision, the 1½ years of classroom and laboratory instruction he/she has already received and also gives the student some practice, under supervision, in managing various areas of a business under actual operating conditions. The student works along side of the department head and is given extensive exposure to the management responsibility.

HEATING

HT 104 / Heating Theory

Theory of oil, gas and electric heating systems. Types, properties and characteristics of fuels and other forms of heat energy. Combustion: types, characteristics, principles of heating equipment, and accessories including steam, hot water, forced air and various types of electric systems. Installation codes and practices.

HT 114 / Heating

Flame detection devices, firing systems, firing sequences and programs, logic diagrams, combustion controls: non-programming and programming. Flue gas analysis and boiler efficiency, boilers, valve train assemblies (C.G.A. & C.S.A. requirements), wiring diagrams, multiple hook-up heating.

Firing of commercial oil and gas burners, wiring and control design for systems in the laboratory, flue gas analysis and conducting boiler testing.

INSTRUMENTATION

INST 100 / Measuring Principles

Theory and construction of mechanical and pneumatic devices for the measurement of pressure, vacuum, temperature, flow of fluids, density, specific gravity, viscosity, etc.

INST 101 / Electronic Instrumentation

Review of fundamentals, electrical pressure, flow level and temperature transducers, indicating and recording potentiometric devices. Radiation and thermoelectricity.

INST 103 / Piping & Instrument Lab Techniques

Instruction and shop practice in flaring and bending soft tubing, piping, soft and hard soldering, hand tools, power machine tools. Valves and their installation.

INST 104T / Telemetering

Instroduction and history, current, voltage, ratio frequency and impulse methods of telemetering. Multiplex systems, pick-ups, links and channels. Calibration, selection and application of telemetering devices.

INST 108 / Instrumentation Fundamentals

Introduction to measurement and control. Pneumatic, mechanical and electrical transducers. Basic theories of automatic control.

INSTRUMENTATION - Cont'd.

INST 203 / Computer Control Principles I

Fundamentals and application of analog computers, fundamentals and application of digital computers, input-output devices, and data conversion, programming and application to process control.

INST 205 / Applied Electronics

Diodes, power transformers, power supplies, voltage doublers, classes of amplifiers, oscillators, multivibrators, time control, photoelectric control.

INST 300 / Automatic Control Principles II

Control considerations. Exponential lag step response and frequency response. Dead time lag step and frequency response. Process combinations: frequency response method and step response method. Controller forms. Process and controller combination. Elementary system stability. The closed loop, disturbances in the closed loop. Control system design.

INST 301 / Computer Control Principles II

Extension of Computer Control Principles I. Interfacing. Analog to digital conversion. Direct digital control. Fluidics and their application to computer technology. Algorithms. Flow charts. Machine language. Application in the science, in business management, in industry.

INST 305T / Applied Solid State Electronics

Semiconductor diodes, testing transistors, transistor amplifiers, integrated circuits, transistorized oscillators, transistorized power supplies, multivibrators, thermistors.

LAW (BUSINESS)

LAW 148 / Law & Economics

The Canadian economy, production, business organization, stocks, bonds, distribution of national income, monetary system, price system, business cycle, banking, savings, investing, real estate, trade, labour movement.

LAW 202 / Business Law

This course is designed to cover in detail the first half of the law requirements to become a legal secretary.

LAW 203 / Business Law

LAW 203 is a continuation of the first semester LAW 202. When this semester is completed, successful graduates, which are always in demand, find employment as legal secretaries no problem. In fact, most of our graduates are hired on or before completing the course.

MACHINE SHOP

MACH 110 / Workshop Technology

Projects involving the care and use of hand and power tools; use of precision and other measuring devices; heat treatment.

MACH 144 / Machine Shop Practice

Layout of patterns and benchwork. Precision measuring instruments and techniques. Drilling machines: their operating features and range of work produced. The bandsaw: operations and features. Heat treatment: theory, use, and practical applications. The engine lathe and the turret lathe: general operating features, range of work produced, commercial accuracy, finishes, lathe accessories, types of cutting tools. Milling machines: horizontal and vertical, operating features, commercial accuracy and finish, gear cutting methods. The universal milling machine. Grinding machines: operating features, commercial practices, quality of finish produced. Jig boring machines. Numerical control of machine tools, dimensioning systems, programming, production runs. The selection of a manufacturing method for a specified component. Locating of fixtures. Checking and inspection procedures used in manufacturing.

MACH 120 / Jigs & Fixtures I

Layout procedures, fitting, fastener application, part planning, jig and fixtures parts.

MACH 121 / Jigs & Fixtures II

Milling, welding, grinding and assembly fixtures, drill jigs.

MACH 122 / Gauges

Plug and ring gauges, gap gauges, special gauges.

MACH 123 / Diemaking

Die parts and functions, types of press tool, die clearance.

MACH 126 / Non-Traditional Machining

Basic numerical control, electrical discharge machining (E.D.M.) and chipless machining processes.

MACH 127 / Hydraulics & Pneumatics

Principles, systems valves, pumps, etc.

MACH 204 / Diemaking I

Punch press theory and operation, press brake theory and operation. Theory, development, construction and operation of the following types of dies: cut-off, trim, pierce, bending, blank, forming, compound.

MACHINE SHOP - Cont'd.

MACH 205 / Diemaking II

Theory, development, construction and operation of the following types of dies: progressive, draw, shaving, lancing, coining and embossing.

MACH 206 / Diemaking III

Theory, development, construction and operation of most of the following dies: cold forming, bulging, swaging, broaching, assembly, sub-press, extruding, curling, side cam, horn, moulds (plastic and die cast).

MACH 208 / Numerical Control

Definitions, history of machine tools, advantages and applications of NC axis, absolute and incremental systems, point to point and continuous path systems, programming, tooling tape preparation, binary systems, machine setups.

MARKETING

MARK 100 / Introduction to Marketing

An orientation course in modern marketing philosophy and functions. Topics include consumer and industrial market segmentation (identification, needs, market size, trends); interrelationships between customer, company goals, invariable factors and the marketing mix (product, price, distribution and promotion); and marketing research.

MARK 101 / Marketing Research & Information Systems

Designed for the user of information rather than for the technical research specialist, the course emphasizes the definition of decision-oriented information needs and the interpretation of information results. Sampling and measurement techniques are studied. Text, cases, project.

MARK 102 / Distribution Channels

An examination of distribution channel structure; the problems, objectives, operations, outlook, policies and function of various wholesale and retail organizations; channel conflict; channel selection for the manufacturer. Text, cases, project.

MARK 200 / Product Planning & Pricing Policy

This is a study of the strategies leading to new product marketing decisions.

It also includes customer and company considerations in determining product pricing for greater marketing profits.

MARKETING - Cont'd.

MARK 201 / The Sales Aspects of Marketing

Your ability to make a personal presentation of yourself, of your ideas, and of your product is a valuable aid in all your business contacts.

This ability is enhanced through an understanding of sales planning and sales techniques.

MARK 202 / Advertising & Sales Promotion

Designed to relate advertising and sales promotional techniques to the marketing environment. Includes target market definition; attitudes, opinions and beliefs; product analysis; analysis of communications, media and sales promotion leading to written objectives, strategies and media execution; socio-economics aspects; the organizations of advertising.

MARK 205 / Marketing Management

This course, with MARK 206, interrelates elements of the marketing mix that were studied separately in previous semesters, by comparing various strategies, their underlying causes, and relating these to company objectives. MARK 205 pays particular attention to promotion and price. Text, cases, computer simulation, project.

MARK 206 / Marketing Management II

This course provides an intensive survey of management decisions related to product strategies, and market planning. The study of realistic company cases also reveals channel costs and distribution structures.

MARK 207 / Marketing Management III

An interrelated and financial overview of the Marketing Management function. Emphasis is on the analysis and application of quantitative factors affecting marketing productivity.

MATHEMATICS

MATH 100 / Mathematics

Semester I - Metric and English measurement, linear equations, quadratic equations, logarithms, trigonometry.

Semester II - Trigonometry: oblique triangle, compounded and multiple angles, sum and product of angles, triangles, circles, functional concepts and notations, introduction to series, analytical geometry, differential calculus.

MATHEMATICS - Cont'd.

MATH 101 / Mathematics

Review of basic algebra; significant figures; standard notation; slide rule; graphs; linear equations; ratio and proportion; quadratic equations, simultaneous equations; topology of elementary networks; radian measure; trigonometry.

MATH 104 / Mathematics

Computation methods; basic algebra; linear equations; trigonometry; oblique triangles; vectors; functions and graphs; simultaneous equations; algebraic factoring; quadratic equations; exponents and radicals; logarithms.

MATH 105 / Mathematics

Semester I - Arithmetic; measurement; proportion; micrometer and vernier; concept of a function; graphical representation; simultaneous equations; quadratic equations.

Semester II - Geometry of triangles, trigonometric functions, trigonometric graphs.

MATH 107 / Technical Mathematics

Semester I - Square root, right angle triangle, algebraic equations, ratio and proportion.

Semester II - exponent laws, linear equations, radical equations formulae, simultaneous equations, graphs, logarithms.

MATH 110 / Mathematics

Basic arithmetic processes, interest, trade discounts, food costs, weights and measures, metric system, ratio and proportion, graphs, recipe quantities, portion costs and selling price calculation, calculating portion sizes and amounts to purchase.

MATH 113 / Business Mathematics

Semester I - Discounts: markups, margin, markdowns. Interest: present value, discounting negotiable instruments, partial payments. Installment purchases: true interest rate on installment purchases. Methods of computation.

Semester II - Shares, depreciation, payrolls, commission, insurance, property taxes. Funds: sinking funds, annuities, mortgages, amortization. Methods of computation.

MATH 114 / Business Mathematics

Fundamental algebraic operations, geometric sequences, logarithms, graphs, interest, annuities, statistics, amortization and sinking funds, bonds, depreciation.

MATHEMATICS - Cont'd.

MATH 115 / Mathematics of Finance

Simple interest, compound interest and discount. Bariables and graphs. Linear functions, exponential functions, logarithms. Representation of data: rounding of data, scientific notation, line graphs, bar graphs, pie graph. Introduction to statistics: the histogram, the frequency polygon, frequency curves.

MATH 116 / Business Mathematics

Number systems and number represenation, binary arithematic, fixed-point and floating-point arithmetic; numerical codes; algebraic function concept; linear functions, equations, linear programming, mathematical and non-mathematical iterative processes.

MATH 120 / Mathematics

Introduction to time sharing; algorithms; elements of basic programming; printing statements; functions and sub-routines; basic statements and rules.

MATH 130 / Mathematics

Semester I - Basic arithmatic; logarithms; slide rule; practical geometry; mensuration: fundamental algebraic processes.

Semester II - Ratio and proportion; trigonometry.

MATH 131 / Mathematics

Semester I - Basic arithmetic; powers; indices; slide rule; fundamental algebraic processes; logarithms; graphs, trigonometry.

Semester II - Impedance diagrams, sine and cosine functions; plane vectors, vector algebra; slide rule' trigonometry.

MATH 132 / Mathematics

Semester I - Basic arithmetic; applied geometry; mensuration; fundamental algebraic operation; slide rule; logarithms.

Semester II - Trigonometry; vectors; ratio and proportion; scale conversions; Metric and English measurement.

MATH 133 / Mathematics

Basic arithmetic; square root; simple interest; loans, financing; mensuration; ratio and proportion; applied geometry; fundamental algebra.

MATH 134 / Mathematics

Semester I - Basic arithmetic; simple interest, trade discounts; mensuration; Pythagorian's theorem; ratio and proportion, scales.

Semester II - Business mathematics; basic bookkeeping, retailing, insurance, investments, taxes, licensing, bankruptcy and insolvency.

MATHEMATICS - Cont'd.

MATH 135 / Business Mathematics

Mathematical operations involving whole numbers, fractions, and percent based upon business problems.

MATH 136 / Mathematics

Semester I - Basic arithematic; mensuration; ratio and proportion; fundamental algebra.

Semester II - Geometric figures; fundamental geometric construction; trigonometry; sine and cosine laws; oblique triangles, logarithms, shop calculations.

MATH 139 / Mathematics

Semester I - Arithmetic; micrometer, vernier, ratio, powers and roots, weights and measures; fundamental algebra; equations, graphs.

Semester II - Geometry; mensuration; trigonometry; slide rule.

MATH 142 / Mathematics

Whole numbers, fractions, units of measure, decimal numbers, per cent, simple interest, plane figures.

MATH 143 / Mathematics

Semester I - Number systems; whole numbers, common fractions, decimal fractions, per cent, units of measure.

Semester II - Operations with decimals and fractions, measurement; linear, square, cubic; basic geometry; percent simple interest.

MATH 146 / Mathematics

Semester I - Fundamental algebraic operations, equations, basic geometry, mensuration.

Semester II - Binomials and trinomials, graphs of algebraic functions, mensuration, trigonometry.

MATH 147 / Mathematics

Semester I - Formulae, graphs, linear functions, logarithms, slide rule, mensuration, equation systems, trigonometry.

Semester II - Quadratic function, trigonometry; A combination of topics selected from the following options: series, geometry, statistics, computer principles, analytic geometry.

MATHEMATICS - Cont'd.

MATH 148 / Business Mathematics

Semester I - Algebra, weights and measures, business graphs, averages, borrowing and buying on credit, markup, gross margin, trade discounts, commission and storage, insurance.

Semester II - Profit and loss, taxation, home ownership, income tax, excise tax, compound interest, annuities, stocks and bonds.

MATH 152 / Business Mathematics

Semester I - Whole numbers, fractions, decimals, simple algebraic expressions and equations, signed numbers, percentage, simple interest, bank accounts, retail business.

Semester II - Practical measurements, ratio, proportion, interest, borrowing, retailing, commission, profit and loss, formulas.

MATH 156 / Business Mathematics

Fundamental arithmetic operations. Method of computation. Percentage: calculation of simple interest, compound interest. Profit and loss, commission, storage, insurance trade discounts. Manipulation of business formulas.

MATH 200 / Mathematics

Semester I - Analytica Geometry, differential calculus, differentiation, practical applications.

Semester II - Integration, the definite integral: areas under curves, volumes. Introduction to differential equations. Practical applications.

MATH 201 / Mathematics

Biomial theorem, permutations and combinations. Quadratic equations. Expotential functions and rate of growth. Basic computer mathematics. Statistical analysis.

MATH 205 / Mathematics

Semester I - Exponents and logarithms; interest, logarithms, probability; statistics, graphs.

Semester II - Boolean algebra; basis of our number system; topology; logic.

MATH 207 / Business & Bookkeeping

Semester I - Business Mathematics. Fundamental operations: Percent, interest, trade discounts, calculations of interest charges, bank drafts.

Semester II - Bookkeeping. The balance sheet, calssified financial statements, specified journals.

MATHEMATICS - Cont'd.

MATH 210 / Accounting

General Accounting for the industry: bookkeeping and accounting methods as used in food service operations.

MATH 211 / Accounting

Purpose, rules, terms used, daily, monthly record sheets, wage and petty cash records, cheques, statements, other records, profit and loss sheets, expenditures, summaries, operation of cash registers, handling money, introduction to cost control, business percentages, formula costing.

MATH 214 / Business Mathematics

Matrix arithmetic; sequences; series and progressions; Boolean tables; symbolic coding; theory of probability; statistics; rounding off data; linegraphs; bar graphs; histogram; frequency polygon; frequency curve.

MATH 215 / Statistics

The elements of statistics as applied to business. Treatment of numerical data: graphical representation, the analytic method. Frequency distributions, measures of central tendency and spread. Elementary probability theory. Introduction to time series and forecasting. Index numbers and their application.

MATH 300T / Mathematics (Statistics)

Elements of statistics. Variables. Variables and graphs, frequency distribution, measurements of central tendency, standard deviation and other measures of dispersion, moments, skewness and normal curve, elementary probability theory, chi-square test, curve fitting and method of least squares. Analysis of measurement, nature of samples, sampling distribution, making estimates from samples. Application to survey data.

MATH 301T / Mathematics (Matrices)

Explanation of matrices and their arithmetic operations, systems of linear equations, matrix multiplication, equivalent and inverse matrices, non-singular matrices, determinants; expansion of a determinant, products of a determinant, computer application to least squares adjustments (chi-squares), data storage and automatic plotting of survey data using matrices.

MATH 306 / Mathematics

The definite integral: the multiple integral. Partial differentiation, differential equations of the first and second order. MacLaurin and Taylor series, Fourier series. Boolean algebra; numbering systems and basic operations, basic theorems and truth tables, application of Boolean techniques to circuit analysis and design.

MATHEMATICS - Cont'd.

MATH 307 / Mathematics

Numerical methods and digital computations; roots of equations, methods of approximation. Case studies of digital computer numerical methods. Statistics: terms and definitions, frequency distributions, measures of central tendency and dispersion, probability concepts, theoretical distributions, sampling distributions, sampling, reliability and estimation.

MATH 316 / Elementary Statistics

An introduction to statistics: organization and presentation of data measures of central tendency; dispersion; frequency distribution; sampling; confidence limits; hypothesis testing; regression analysis; experimental design.

MECHANICS

MECH 100 / Mechanics

Semester I - Statics: concurrent co-planer force systems, resultant forces, equilibrium forces, structural forces, centres of gravity and centroids, moments of inertia. Work, energy, and power.

Semester II - Machines: velocity, acceleration, displacement, laws of motion, Galileo's equations, inertia force, angular motion, work, energy, power, impact.

MECH 102 / Mechanics

Concurrent and non-concurrent coplanar forces; force systems; moments; equilibrium; friction; work, energy, power; machines; velocity; acceleration; angular displacement, centripetal acceleration; centripetal forces; conservation of momentum.

MECH 104 / Mechanics

Forces and basic principles; moments; equilibrium; applications of equilibrium; centroids; power; simple machines; centre of gravity; kinematics, force and acceleration; energy; impact and momentum.

MECH 110 / Mechanics of Materials

Semester I - Statics review: forces in structures, stress and deformation, stress and strain. Yong's modulus of elasticity. Riveted and welded joints, torsion.

Semester II - Centroids, moment of inertia. Beams, stresses in beams, deflection of simple beams, thick and thin wall cylinders, combined stresses. Point and distributed loadings, columns.

MECHANICS - Cont'd.

MECH 114 / Strength of Materials

Review basic principles; properties of materials; stress, strain and deformation; centroids, moments of inertia; centroids, moments of inertia; bending moments; torsion, combined stresses.

MECH 115 / Mechanics of Fluids

Semester I - Properti4s of fluids: capillarity, viscosity, surface tension, etc. Hydrostatic force and pressure. Centre of pressure. Buoyancy and floatation.

Semester II - Fundamentals of fluid flow - Benoulli's theorem, continuity, orifices, nozzles and weirs. Fluid flow in pipes - Moody chart. Fundamental principles of hydrodynamics. Dimensional analysis.

MECH 210 / Mechanics of Materials

Semester I - Shear forces, binding moments in beams, cantilevers and continuous beams, reinforced concrete design, structural steel design, use of tables.

Semester II - Selection of sections beams, stanchions, columns, plate girders, riveted, bolted and welded connections, steel roof truss design, joint details.

MEDICAL TECHNOLOGY (ORTHOTICS-PROSTHETICS)

MED 100 / Introductory Anatomy & Biomechanics

Functional anatomy of the human body including skeletal structure (osteology), muscle systems (myology), blood circulation system (angiology), nervous system (neurology) and functions of digestion, respiration and excretion. Basic anthropometric data, physical properties of tissues, analysis of forces acting on the skeletal structures and torques developed around body joints.

MED 200 / Intermediate Anatomy

The functional anatomy of the human body including study of the anatomical joints in relation to orthotic-prosthetic hardware. Pathological studies of the skeletal structures including indications for amputation.

MED 201 / Introductory Physiology

Skin disorders and cell structure. Blood, its composition and functions. The functional muscular system, circulators and respiratory.

MED 202 / Introductory Pathology

Diseases of the body including degenerative erosion of the joints. Methods of treatment in relation to external and internal prostheses. Cardiovascular system.

MEDICAL TECHNOLOGY (ORTHOTICS-PROSTHETICS) - Cont'd.

MED 300 / Advanced Anatomy & Kinesiology

Prosthetic/orthotic design in relationship with body conformation, skeletal and musculature contours. Maintenance of high standard of fitting practices in static and dynamic alignment. Electrical diagnosis, check-out, and finalization of prosthetic/orthotic components.

MED 301 / Physiology

Systems of the body co-related with other courses. The effects of amputation on nervous, arterial, veinous, circulatory and respiratory systems. Surgical techniques. Atrophy and hypertrophy.

MED 302 / Pathology

Bone and cellular structure, weight bearing areas. Diseases and their effects. Pain, symptoms, causes and indications for surgery. Blood supply, protein, living and dead cellular structures, skin.

METALLURGY

MET 100 / Metallurgy

Atomic theory of metals: metallic states, grain formation and growth, metal deformation, mechanical properties, heat treatment of metals. Iron and steel: iron-carbon equilibrium diagram; types, properties and uses of cast iron; production, types, properties and uses of steel. Production, properties and uses of non-ferrous metals: aluminum and its alloys, copper and its alloys, magnesium and its alloys, nickel and its alloys, lead and its alloys.

MET 200 / Metallurgy

A comprehensive study of the metals and alloys used by the dental technician. A study is made of the metallurgical principles involved in structures and states of metals and metallic compounds, with emphasis on gold and its alloys, silver, plantinum and copper. A study is also made of base metal alloys.

NUTRITION

NUT 100 / Nutrition

Nutritional needs for good health. The "Canada Food Rules". Composition of foods and functions of the five groups of nutrients; vitamins, minerals, proteins, fats , and carbohydrates. The function of roughage and water; digestion and metabolism. Modified diets to treat various conditions, variations in caloric content, in texture and consistency, and in nutrient composition.

NUT 200 / Therapeutic Nutrition

Assessment of nutritional needs with special focus on the patient and his perspective. Nutritional analysis and plan of care with the problem-solving approach. Process recording as a means of evaluating the interaction with a patient. Applied nutriton: clinical case studies.

OFFICE PRACTICE

OP 100 / Typewriting

To develop speed and accuracy with emphasis on proper touch typing techniques; introduction to basic centering, tabulation, business letter styles and preparation of manuscripts and proofreading.

OP 101 / Typewriting and Office Practice

To further develop speed and accuracy on electric typewriters and, in addition, to complete more advanced theory projects.

OP 114 / Office Practice

The first semester will be devoted to developing the students' skill in the manipulation of the typewriter. In the second semester, the student will concentrate in familiarizing herself with the business office aspects of a dental practice and her duties and responsibilities therein. In so doing, she will be required to apply the typewriting theory mastered in the first semester. Instruction covers bookkeeping, correspondence, banking, appointment planning, credit and collection, patient records and accounts.

OP 200-201 / Office Practice

In addition to further skill development, to familiarize the student with the role of the secretary in business organizations and her duties, including communications, filing, banking and finance, meetings and conferences, travel arrangements, etc.

OP 202-203 / Legal Office Practice

Additional to further development of typing skills, emphasis will be placed on the preparation of legal instruments involving court documents, real estate, divorce papers and partnerships and corporations, as well as receptionist, accounting and secretarial duties involved in running a legal office.

OP 204-205 / Medical Office Practice

To further develop typing skills with emphasis on handling the daily routine of a doctor's office including appointments, correspondence, patient files and medical forms, OHIP and Workmen's Compensation forms, and the assignments involved when part of a hospital dicta typing pool.

PATTERN MAKING

PAT 242A

The commercial pattern marker and duplicator; optimum use of fabric, etc.

PAT 245

An advanced application of the design function for theatre arts.

PATTERN MAKING - Cont'd

PAT 341

Projects and practice designed to develop knack of predicting style change and consumer demand; and adjustments needed in design room and on plant floor.

PHYSICS

PHYS 100 / Applied Physics 1

Semester 1: Fluid mechanics; heat and thermometry; heat effects; heat measurement; changes of state; heat transfer.
Semester 11: Thermodynamics; heat engines, refrigeration; sound; nature of light.

PHYS 101 / Physics

System of units; heat; heat transfer; vibration and waves; light; ray optics; illumination; physical optics; colour; sound.

PHYS 104 / Applied Physics

This course is orientated toward the fundamentals of the food processing industry.
Semester 1: Precision of measurement, matter, mechanics, heat, sound.
Semester 11: Light, electricity, magnetism, electronics, atomic energy.

PHYS 105 / Physics

Properties of matter; fluids; heat; principles of machines; light; metallurgy; electrostatics.

PHYS 121 / Applied Physics

Semester 1: Heat and temperature; properties of matter; chemistry of combustion; heat transfer.
Semester 11: Force, work, power, simple machines, laws of friction, fundamentals of electricity.

PHYS 130 / Applied Physics

Semester 1: Types of forces, vector diagrams, simple machines, work, energy, power, hydraulics.
Semester 11: Heat and temperature; fundamentals of electricity; Hooke's Law.

PHYS 131 / Applied Physics

Semester 1: Fundamentals of electricity; introduction to solid state physics; electrical measuring devices.
Semester 11: Mechanics, vectors, motion, properties of sound, nature of light, heat and thermometry.

PHYSICS - Cont'd

PHYS 132 / Applied Physics

Semester 1: Properties of matter; hydrostatics; atmospheric pressure, gauge and absolute pressure, barometry, pressure at depth. Hydraulics: Pascal's Law, hydraulic devices, pneumatic devices.
Semester 11: Heat and Thermometry: Gas laws; work, energy, power; machines; properties of light; nature of sound; properties of materials; forces.

PHYS 133 / Applied Physics

The atmosphere; nature of water; strength of materials; properties of heat, work, power energy, basic electricity.

PHYS 143 / Applied Science

Semester 1: Measurement; density; heat and temperature; surface tension and viscosity; Elements of electricity; light; simple machines.
Semester 11: Properties of matter; physical and chemical changes, atomic theory, properties of acids, bases and salts, pH measurement; organic chemistry.

PHYS 135 / Applied Physics

Properties of matter; concept of force; hydraulics, pressure and density, hydraulic and pneumatic devices, electrical fundamentals, codes.

PHYS 136 / Applied Physics

Semester 1: Heat and Temperature: effects of heat, temperature scales, heat units, specific heat, calorific values of fuels
Semester 11: Structure of Matter: elements, mixtures and compounds. Basic chemistry of combustion, chemical composition of fuels, combination rates of fuels, transfer of heat.

PHYS 137 / Applied Physics

Semester 1: Work, energy and power; simple machines, laws of friction, heat and temperature.
Semester 11: Basic electrical fundamentals, Ohm's Law, electrical circuits, electromagnetism, thermocouples, transformers, generators, motors, capacitors and capacitance.

PHYS 138 / Applied Physics

Semester 1: Classification and properties of matter; gas laws, properties of petrochemicals; solvents and refrigerants; properties of soaps and detergents; corrosion.
Semester 11: Density; force, properties of solids; strength of materials; heat effects; hydraulic devices, simple machines.

PHYSICS - Cont'd

PHYS 139 / Physics

Semester 1: Language of science; measurement; density; heat and temperature; the atmosphere; light.
Semester 11: Fundamentals of chemistry; mixtures and substances; atomic structure; acids and bases; chemical equations; pH; metallurgy; chemistry of photography and papermaking.

PHYS 140 / Applied Physics

Semester 1: Force systems; principle of momentum, laws of friction; work energy and power; simple machines; hydraulic and pneumatic devices; energy, properties of materials.
Semester 11: Heat and thermometry; classification and properties of matter; properties of pure metals and alloys, magnets; nature of light.

PHYS 143 / Science

Semester 1: The solar system, the atmosphere, earth history, properties of water.
Semester 11: Kinetic theory, heat transfer, thermometry, physical properties of matter, physical change, changes of state elements, compounds, mixtures and solutions.

PHYS 146 / Science

Semester III: Properties of matter, properties of materials, density, specific gravity, pressure, nature of sound and light, introduction to heat and thermometry.
Semester IV: Heat and thermometry, force, work, energy, power, machines, electricity and magnetism.

PHYS 147 / Science

Four out of the following ten modules are offered: mechanics, heat, vibratory motion, electricity, electronics, chemistry II, chemistry III, biology II, biology III, computer studies.

PHYS 150 / Science

Metric system; density; electrostatics, thermometers; heat; hydrostatics, pressure; solids, liquids; solutions; sterilization and sanitation.

PHYS 200 / Modern Physics

Semester 1: The spectrum; atomic physics, Bohr atom line spectra, waves and particles, atomic model, chroedinger wave equation, solid state physics, crystalline solids, classification by structure and by energy.
Semester 11: Physical states; alloy structure; theory of semi-conductors; nuclear physics, relativity, nuclear particles, nuclear energy.

PHYSICS - Cont'd

PHYS 202 / Thermodynamics

Semester 1: Energy transformations; definition of terms, the PV diagram, laws of thermodynamics; the gas laws, Joule's equivalent.
Semester 11: Indicator diagrams; thermal efficiency, ideal engine cycles, engine efficiencies, heat transfer, entropy; changes of state, isobaric, isochoric, isothermal, adiabatic, polytropic.

PHYS 210 / Applied Physics

Semester 1: Principles of hydraulic and pneumatic devices and systems.
Semester 11: Principles of electrical systems and operating principles of electrical devices. Fundamentals of computer analysis, codes and safety.

PLASTICS

PL 100 / Materials/Thermoplastic

Fundamentals and characterization of polymers. Introduction to basic resins. Engineering thermoplastics and natural polymers. Identification of plastics and elastomers by simple tests.

PL 101 / Materials/Thermoplastics

Fundamentals and characterization of polymers.

PL 102 Materials/Thermoplastics

Introduction to basic resins. Engineering thermoplastics and natural polymers. Identification of plastics and elastomers by simple test. Fluorine polymers. The new plastics. Reinforced thermoplastics and elastomers.

PL 103 / Materials/Thermoset

History and Introduction to polyester and epoxy resins. Reinforcements and fillers. Composites. Strength of material definitions.

PL 104 / Materials/Thermosets

History and introduction to polyester and epoxy resins. Reinforcements and fillers.

PL 105 / Materials/Thermosets

Composites. Strength of materials definitions. Properties, chemistry, curing and quality control for thermosetting resins. Polyester, epoxies, alkyds, phenolics, silicones, amino resins.

PLASTICS - Cont'd

PL 110 / Processes/Thermoplastic

Basic theory and application of thermoplastic processes. Mixing and dispersing, extrusion, injection moulding, calendering, blow moulding, sheet forming, sealing and welding, coating and machining.

PL 111 / Techniques/Thermoplastics

Basic theory and application of thermoplastic processes. Mixing and dispersing, operation of extrusion, injection moulding, calendering and blow moulding equipment. Manufacturers' literature. Design of plastic parts and processing equipment, materials selection, selection of a process. Part design, injection mould design (plus Course DR100 - Technical Drawing).

PL 112 / Techniques/Thermoplastics

Practical machine moulding - extrusion, injection, blow moulding, tubular and cast film making, extrusion laminating, sheet production and filament extrusion. Design for tube extrusion and tubular film. Design for flat film and sheeting. Design for profiles. Design for blow moulding. Multi-screw extruders and miniature extruders. (Plus Course DR100 - Technical Drawing).

PL 113 / Processes/Thermoset

Theory and application of reinforced thermosetting plastic processes. Pattern and mould making, hand lay-up, spray-up, filament winding.

PL 114 / Techniques/Thermosets

Theory and application of reinforced thermosetting plastic processes. Pattern and mould making, hand lay-up practice. Design characteristics for glass fibre reinforced plastics. Throwaway and plaster tooling. (Plus Course DR100 - Technical Drawing).

PL 115 / Techniques/Thermosets

Spray-up and filament winding. Matched die, compression and transfer moulding. Injection moulding, reinforced plastics mould and tooling design. Wooden and metal moulds. Cost estimating. (Plus Course DR100 - Technical Drawing)

PL 120 / Design/Thermoplastic

Design of plastic parts and processing equipment. Materials selection. Selection of a process. Part design, injection mould design, extrusion die design, design of moulds for hollow formed articles, auxiliary equipment.

PL 123 / Design/Thermoset

Design characteristics for glass fibre reinforced plastics. Throwaway and plastic tooling. Reinforced plastic moulds and tooling. Wooden and metal moulds. Cost estimating.

PLASTICS - Cont'd

PL 125 / Plastic Fundamentals

Materials, processes, design, thermoplastics, and thermosets.

PL 130 / Materials/Thermoplastic

Introduction to basic resins. Engineering thermoplastics and natural polymers. Identification of plastics and elastomers by simple tests.

PL 131 / Materials/Thermoplastic

Thermoplastic sheets, rods, tubes and profile shapes. Solvents and adhesives. Properties of polyvinyl chloride, acrylics, polyethylene, polypropylene and other materials used in forming and fabricating of thermoplastics.

PL 132 / Same as PL 103

PL 133 / Processes/Thermoplastic

Basic theory and practice in the operation of processing equipment. Extrusion, injection and blow moulding.

PL 134 / Processes/Thermoplastic

Basic theory and practice in the operations of sheet forming, sealing and welding, casting, coating and machining of thermoplastics.

PL 135 / Processes/Thermoset

Theory and practice in pattern and mould making, hand lay-up, spray-up, filament winding.

PL 136 / Design/Thermoplastic

Mould and die design, machine design. Cost estimating.

PL 137 / Design/Thermoplastic

Design of machines, jigs and fixtures, tooling. Cost estimating.

PL 138 / Design/Thermoset

Throwaway and plastic tooling. Reinforced plastic moulds and tooling. Wooden and metal moulds. Cost estimating.

PL 139 / Design/Thermoset

Mould and die design, machine design. Cost estimating.

PL 140 / Same as PL 203

PLASTICS - Cont'd

PL 141 / Processes/Thermoset

Theory and application of moulding thermoset materials. Matched die moulding, compression moulding, transfer and injection moulding.

PL 200 / Materials/Thermoplastic

Fluorine polymers. The new plastics. Reinforced thermoplastics and elastomers. Material testing. Product testing. Material selection.

PL 201 / Materials/Thermoplastics

Material testing. Product testing. Material selection.

PL 203 / PL 140 / Materials/Thermoset

Properties, chemistry, curing and quality control for thermosetting resins. Polyesters, epoxies, alkyds, phenolics, silicones, amino resins, furanes and polyurethanes.

PL 204 / Materials/Thermosets

Furanes and polyurethanes.

PL 210 / Processes/Thermoplastic

Advanced theory and application of thermoplastic processes. This course covers the same processes as listed in PL 110, but in greater depth.

PL 211 / Processes/Thermoset

Theory and application of moulding thermoset materials. Matched die moulding, compression, transfer, and injection moulding.

PL 211 (a) / Techniques/Thermoplastics

Sheet forming, sealing and welding, finishing and machining. Advanced theory and application of thermoplastic processes. Extrusion die design, design of moulds for hollow, formed articles. Auxilliary equipment. Jigs and fixtures. Basic cost estimating.

PL 212 / Techniques/Thermoset

Theory and application of cellular plastic moulding and casting. Materials and designs for flexible moulds.

PL 220 / Design/Thermoplastic

Advanced design-process selection, mould and die design, product design. Auxiliary equipment, jig and fixture design. Cost estimating.

PL 223 / Design/Thermoset

Mould and die design, machine design. Cost estimating.

PSYCHOLOGY

PSY 160 / General Psychology

A study of human motivation, perception, and learning processes; theories of personality development, nature of intelligence and psychological testing; meaning of elementary statistical terminology related to the study of children.

PSY 200 / Psychology

A general introductory course to the study of human behaviour with consideration given to human motivation, perception, and the learning process. Theories of personality development, the concept of roles and the nature of intelligence with be discussed.

PSY 201 / Business Psychology

Formal and informal organizations. Consumer motivation. Consumer analysis, depth interviews, attitude and opinion surveys. Theory of psycho persuasion.

PSY 202 / Psychology

Clinical approach to the new amputee. Basic understanding of some of his problems and how to deal with them. Environment and family acceptance of amputees.

PSY 204 / Industrial Psychology and Salesmanship

A study of the application of psychological methods and principles in business and industry. Personnel selection, factors involving efficiency. Factors in selling process: buying habits, motives. The pre-approach, the approach, the presentation, the close.

PSY 205 / Applied Psychology

As related to patient management. Procedures involving children and adults in the reception area, operatory, and business office.

PROSTHETICS

PROS 100 / Introductory Orthopaedics

Early surgical techniques and their modern development; development of prosthetic and orthotic devices including below the knee, above the knee and upper extremity prostheses; upper extremity, lower extremity and spinal orthoses.

PROSTHETICS - Cont'd

PROS 101 / Materials & Shop Techniques

A practical study of the hand and machine fabrication of components from ferrous and non-ferrous metals, plastics, leather, fabrics and plaster; reinforcing materials, hand lay-up procedures, vacuum laminations; fastening, polishing and buffing of plastics; machine sewing, manufacture of plaster moulds and models, including use of plaster bandages, as well as types and applications of adhesives and other fastening devices.

PROS 200 / Orthotic and Prosthetic Techniques

Casting, moulding, modifications, laminations, fabrication, installation of hardware and jigs in preparation for use by patients, including prosthesis and orthosis for upper and lower extremity deficiencies.

PROS 202 / Materials and Shop Techniques

Properties of materials such as plastizote, vitrathenes, leather, plastics and their clinical applications.

PROS 203 / Field Practice

Participation in various clinics, amputees assessment, formulating prescriptions, working with other members of the rehabilitation team. Visits to recognized establishments and working in a practical environment.

PROS 300 / Advanced Orthotic and Prosthetic Techniques

Modular prosthetics, fracture casting, immediate post-operative fitting techniques. Advanced prosthetic/orthotic casting and modification procedures. Fitting problems, and new materials as they are introduced.

PROS 301 / Physical and Occupational Therapy

Patient treatment with considerations given to levels of activity, age, occupation and eventual rehabilitation into society.

PROS 302 / Research Project

The project will enable the student to apply his theoretical knowledge and practical ability to the design, fabrication, testing and acceptance of prosthetic/orthotic components to meet the requirements and standards of the profession.

PROS 303 / Field Practice

Involvement with patients for the actual fitting, design and fabrication from prescription with consideration given to clinical assessment, in conjunction with certified member of prosthetic/orthotic profession.

SANITATION

SAN 100 / Sanitation & Hygiene

Cause and prevention of food-borne illnesses. Sanitary maintenance of all areas of food service establishments. The student is instructed in the proper handling of food, beverages, equipment, and other materials in storage. Sanitation through proper dishwashing equipment,

SMALL BUSINESS MANAGEMENT

SBM 10 / Small Business Management

Business Mathematics; Basic Bookkeeping; balance sheet, financial statements. Business Practice; retailing, insurance, banking, taxes, licensing, business failure, promotions.

SBM 132 / Small Business Management

Business Mathematics; Basic Bookkeeping: journals, ledgers, financial statements, entries, special journals. Business organization; business law; sales and advertising.

SBM 332 / Economics

Semester 1: Personal money management; credit usage; basic business practices.
Semester 11: Banking Policies; supply, demand relationship; business cycle; human relationships in business; government law and regulations; sales promotion.

SEWING

SEW 241

As DRES 248 for factory supplies, equipment, accessories, etc.

SEW 245

The industrial uses of various power sewing machines and how their operations are timed and the work analysed.

SHORTHAND

SH 100

In this semester the theory of the system is thoroughly covered and a good foundation is laid for the development of speed in the following semesters.

SHORTHAND - Cont'd

SH 101

This semester is mainly devoted to developing the technique of taking dictation at speeds of up to 100 wpm and transcribing it in mailable form.

SH 200 & 201

These two semesters continue developing the ability to write shorthand at increasing speeds, up to 130 wpm and transcribing the material in mailable form.

SECRETARIAL SCIENCE LEGAL

SH 202 & 203

Particular emphasis is placed on developing the ability of the writer to handle the kind of terminology that is likely to be encountered in a legal office, at an acceptable writing speed.

SECRETARIAL SCIENCE MEDICAL

SH 204 & 205

Particular emphasis is placed on developing the ability of the writer to handle the kind of terminology that is likely to be encountered in the medical profession, at an acceptable writing speed.

SH 302, 303 / Shorthand and Transcription

As well as developing the ability of the student to write shorthand at speeds of up to 200 wpm, time is also devoted to single and multi-voice dictation as is likely to be encountered in the courtroom, conference room or in parliamentary debate.

STRUCTURAL STEEL

STR 122 / Structural Detailing

The preparation of design and detail drawings of standard structural steel, reinforced concrete and timer construction.

STR 212 / Structural Steel Problems and Drawing

Drafting office routines, shop practice, detailing and related design of the components of steel construction.

STRUCTURAL STEEL - Cont'd

STR 213 / Reinforced Concrete Problems and Drawing

Drafting office routines, shop practice, detailing and related design of the components of reinforced concrete construction.

STR 214 / Project Drawing

Project drawing from design sketches; specifications and standards to develop complete sets of design; detail and structural drawings.

SURVEYING

SURV 100 / Survey Computations and Drafting

Introduction to elements of surveying and survey drawing, Ontario land system, survey calculations, interpretation of legal boundary notes.

SURV 101 - Plane Surveying

Fundamental principles of surveying and the use of survey instruments and equipment, field procedures for topographical surveying and basic construction layout.

SURV 110 / Surveying

A basic course in the fundamentals of plane surveying, utilizing the various survey instruments and equipment.

SURV 200 / Survey Computations and Drafting

Survey plans and calculations for land exchange, easement, expropriations, route locations and earthwork quantities.

SURV 201 / Advanced Plane Surveying

The field work and equipment required to produce good quality 3rd order control over a large area, using geodetic co-ordinates; the adjustment and computation of the results by regular methods and by computer; the drafting of the final plan.

SURV 202 / Photogrammetry

Theory and photogrammetric mapping, use of aerial photographs in surveying, mapping procedures.

SURV 203 / Practical Astronomy

Polaris observation for meridian, determination by astronomic observation of longitude, time latitude, sun observation, use of tables, calculation procedures.

SURVEYING - Cont'd

SURV 204 / Legal Surveying

History and development of land registration system, methods of registering, legal transfers and general procedures, field trips to registry, land titles, and township offices.

TOOL DESIGN

TD 110 / Metrology

History and basic principles: Basic instrumentation, dial gauges and test indicators, surface plates, micrometers and verniers, gauge blocks, optical instruments and testing, surface finish screw threads, gears, angular measurement, fixed gauges, air gauging, autometrology.

WATCHMAKING

WATCH 130 / Theory

History of timekeeping instruments; celestial basis for time measuring; time zones. Units of linear measurements and measuring instruments. Basic principles of turning, filing, grinding and polishing, and burnishing.

WATCH 131 / Skills

Care and use of basic tools. Screw plate exercises. Basic turning exercises. Files and filing techniques. Turning in brass and steel. Making balance staffs.

WATCH 132 / Theory

Balance wheels and balance staffs, truing and poising, removing broken staffs. Watch hairsprings. History of colleting, truing and vibrating principles. Introductory hairspring theory, principles of isochronism, flat and overcoil hairsprings. Clock construction. Clock escapements. Pendulums.

WATCH 133 / Skills

Staking and removing balance staffs. Basic hairspring manipulations. Colleting, truing, vibrating and overcoiling techniques. Clock repairing. Trouble shooting and various aspects of servicing alarm, mantel and wall clocks.

WATCHMAKING - Cont'd

WATCH 230 / Theory

Principles of oscillatory motion, types of oscillators, basic laws of motion. Friction and lubrication. Jewels and jewelling principles. Advanced hairspring theory. The Swiss lever escapement: Principles of design and operation. Power unit and power supply. Advanced balance and hairspring theory.

WATCH 231 / Skills

Advanced turning operations, alterations and fitting of parts. Jewelling: bezel type and friction type. Escapement matching. Hairspring manipulations. Colleting, truing, vibrating and overcoiling of watch hairsprings.

WATCH 232 / Theory

Gearing theory and calculations. Theory of watch construction. Watch timing and adjusting. Automatic winding mechanisms. Calendar mechanisms. Other types of watch escapements. Waterproofing.

WATCH 233 / Skills

Fitting of stems and crowns, round and fancy crystals. Replacing mainsprings. Watch overhaul and lubrication. Adjusting manipulations: adjustments to positions, adjustments to isochronism, adjustments to mean time. Practical testing and waterproofing.

WATCH 330 / Theory

Principles of precision adjustments of chronometres. Detent escapements. Helical balance springs. Complete phase calendar mechanisms. Perpetual calendar watches.

WATCH 331 / Skills

General overhauling techniques. Precision watch timing and adjusting. Overhauling of perpetual calendar and other types of complicated watches.

WATCH 332 / Theory

Chronograph watches: principles of operation, types, adjustments, types of dials. Automatic-chronographs and calendar watches. Principles of operation and adjustment. Electric and electronic watches: with balance wheels, with tuning forks, with quartz crystal oscillators.

WATCH 333 / Skills

Overhauling and adjustments of various types of chronographs and automatic-chronograph watches. Servicing of all types of electric and electronic watches.

WELDING

WELD 100 / Manual Welding Processes

Further study of oxy-acetylene and manual metallic arc processes and their application to the welding of sheet, plate, pipe and structural sections. Welding techniques as applied to a variety of metals and joint configurations. Weld inspection and testing.

WELD 101 / Gas Tungsten Arc Welding

Description, characteristics, and application of G.T.A. welding and auxiliary equipment and supplies. Preparation procedures and welding techniques as applied to various metals. Joint Design. Purging procedures. Operational difficulties and their solutions.

WELD 102 / Semi-automatic and Automatic Welding Processes

Theory and operation of semi-automatic and automatic versions of metal inert gas welding, CO_2 short circuiting, CO_2 flex cored wire, open arc, submerged arc, electroslag, plasma arc, resistance and stud welding processes. Study of equipment requirements and operational trouble shooting. Selection of filler wires and shielding gases. Welding procedures and weld testing.

WELD 103 / Industrial Welding Applications and Shop Procedures

Fabrication procedures involving the use of various types of welding and metalworking equipment. Application of manual, semi-automatic, and automatic welding equipment to production. Process and equipment selection. Quality control and codes. Estimating, shop and production planning. Use of weld inspection equipment to perform destructive and non-destructive tests. Supervision.

WELD 145-6 / Oxy-Acetylene Welding, Brazing & Cutting

Theory: Safety precautions, terminology. Assembly and disassembly of equipment, care of equipment. Types of flames and their uses. Joint design. Weld faults. Repair of casting, handling of oxygen and acetylene. Testing of welds and operators. Practice: Fusion welding and braze welding. Cutting with manual and semi-automatic equipment.

Academic Upgrading 7
Accommodation, Living 15
Additional Expenditures 10
Admission Procedures 7
Admission Requirements 8
Advanced Standing 8
Applicants from Foreign Countries 9
Athletics and Recreation 14

Bookstores 15

Cafeterias 15
Campus Facilities 15
Campuses 6
College, The 6
Counselling Services 14

Equivalent Standing 10

Fees 9
Financial Assistance 14

Glossary 13
Grade Point Average (GPA) 12
Grading 11

Health Centres 14

Identification Cards 9

Libraries 15
Living Accommodation 15

Mature Students 8
Mutual Responsibility Agreement 9

OHIP 15
Ontario Manpower Retraining Programs (OMRP) 10

Parking 16
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Priority of Admissions 8
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Program Evaluation 11
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INDEX - PROGRAM INFORMATION

* denotes an Ontario Manpower Retraining Program (OMRP)

\# denotes an apprenticeship program

Numbers preceding program titles designate minimum educational prerequisites in terms of Ontario grades: 0 indicates that there is no stated educational prerequisite for that program. The number 12 preceding a program title indicates a post-secondary program.

Capital letters represent the name of the campus where the program is offered:

CL: Casa Loma Campus
K: Kensington Campus
T: Terauley Campus
C: College Street Campus
KE: Keele Campus

Answers to inquiries may be obtained by dialling (416) 967-1212 and asking for "Information".

T & C	0	*Academic Upgrading (College Preparatory)	17
T	12	Accounting	52
K	12	Addiction Counsellor	21
CL	10	#Air Conditioning & Refrigeration Worker	159
CL	12	Air Conditioning Technician	30
T	8	*Apartment Building Superintendent	156
C	0	Apparel Design & Pattern Drafting	123
K	12	Apparel Engineering Technology	113
CL	10	*Appliance Servicing	45
K	12	Bakery Technician	133
K	8	#Baker	159
K	10	*Baking Pre-employment	134
K	9	#Barber	159
K	10	*Bartending	140
CL	10	*Blueprint Reading - Architectural	48
CL	8	*Blueprint Reading for Welders	112
CL	8	#Brick & Stone Mason	159
T	12	Business Administration	51
T	12	Business Administration - General	55
CL	10	*Business Equipment Servicing	102
T	10	*Business Machines	68

T & KE	10	*Business Machines & Bookkeeping	63
CL	10	#Carpenter	159
CL	8	*Carpentry - General	50
CL	8	#Cement Mason	159
T	0	*Certified Building Custodian	156
K	10	*Chef Refresher	138
K	10	#Chef	159
K	10	Chef Training Pre-employment	135
K	12	Child Care Worker	19
CL	12	Civil Engineering Technician	42
T & KE	10	*Clerk Typist	64
T	11	*CCTV & VTR Repair & Maintenance	85
CL	12	Coatings Technician	93
T	0	*Colour Television	84
T & KE	10	*Commercial Accountancy	65
C	10	*Commercial Art	147
T & KE	8	*Commercial Clerical	64
T	10	*Commercial Dicta-Typist	67
T & KE	0	*Commercial Refresher	66
T & KE	10	*Commercial Stenographic	63
K	8	*Community Worker	155
K	12	Concrete Technician	26
CL	12	Construction Technician	40
CL	12	*Cook Training	33
K	10	Court Reporting	136
T	12	Creative Fashions (Apparel)	61
C	12	*Custom Dressmaking & Alterations	116
C	6	Day Care Worker	124
K	12	Dental Assistant	23
CL	12	Dental Technician	27
CL	12	Denture Therapist	20
CL	12	Design Technician - Electrical	24
CL	12	Dietary Services Administration	70
K	12	*Dining Room Service	129
K	10	*Drafting	137
CL	10		43

CL	10	Drafting - Mechanical Engineering	111
CL	10	*Drafting Refresher	43
CL	12	Drafting Technician - Architectural	34
CL	12	- General	35
CL	12	- Mechanical Services	36
CL	12	- Structural	37
CL	8	*Dry Wall Taper	48
CL	10	#Electrician (Construction & Maintenance)	159
CL	12	Electrical Technician	72
CL	12	Electrical Technologist	80
T	12	Electronic Data Processing	53
T	10	*E.D.P. I (Keypunch & Verifier)	67
T	12	Electronic Technician	75
T	12	Electronic Technology	78
T	12	*Electronics - General	83
T & C	0	*English as a Second Language	18
T	0	English Language for Provisional Tradesmen	18
K	10	*Fast Food Service Cooks	139
T	0	*Film Imposition & Surface Preparation for Typographers	150
K	12	Food Administration	130
K	12	Food Processing Technology	127
K	0	*Food Service Hostess	138
C	10	*Fur Business & Manufacturing Techniques	126
K	12	Furniture Arts Technology	157
K	8	*Furniture Refinishing & Repair	153
K	0	*Furniture Upholstery & Repair	153
CL	10	#Glazier & Metal Mechanic	159
T	12	Graphic Arts (Printing Technician)	141
C	12	Graphic Design Technician	143
K	9	#Hairdresser	159
K	0	*Hairstyling for Barbers	154
CL	12	Health & Fitness Instructor	151
CL	10	*Heating Technician	44
K	10	*Hospital Orderly	28

K	12	Hotel-Motel Administration	131
K	10	*Industrial Instrumentation Mechanic	103
K	12	Industrial Instrumentation Technician	86
K	12	Industrial Instrumentation Technologist	98
C	0	*Industrial Power Sewing	125
T	10	*Inventory Control	65
CL	10	#Ironworker	159
CL	12	Jewellery Arts	121
CL	10	*Lathe Operator	112
CL	10	#Lather	159
CL	12	Machine & Product Design	90
CL	10	*Machine Shop Practice	104
CL	10	#Machinist	159
T	12	Marketing	54
CL	12	Materials Handling Design	92
CL	10	#Millwright	159
K	10	*Nursery Aide	29
T	10	*Offset Printing	146
T	0	*Offset Printing for Letterpressmen	149
CL	10	*Oil Burner Servicing	45
CL	12	Orthotic-Prosthetic Techniques	94
CL	10	#Painter & Decorator	159
CL	8	*Painting & Decorating - Architectural	49
T	0	*Photo Composition & Paste-up Assembly for Typographers	149
T	0	*Photo Reproduction for Typographers	150
T	12	Physical Distribution	60
CL	8	#Plasterer	159
CL	12	Plastics Technician A	87
CL	12	Plastics Technician B	107
CL	12	Plastics Technician C	100
CL	10	#Plumber	159

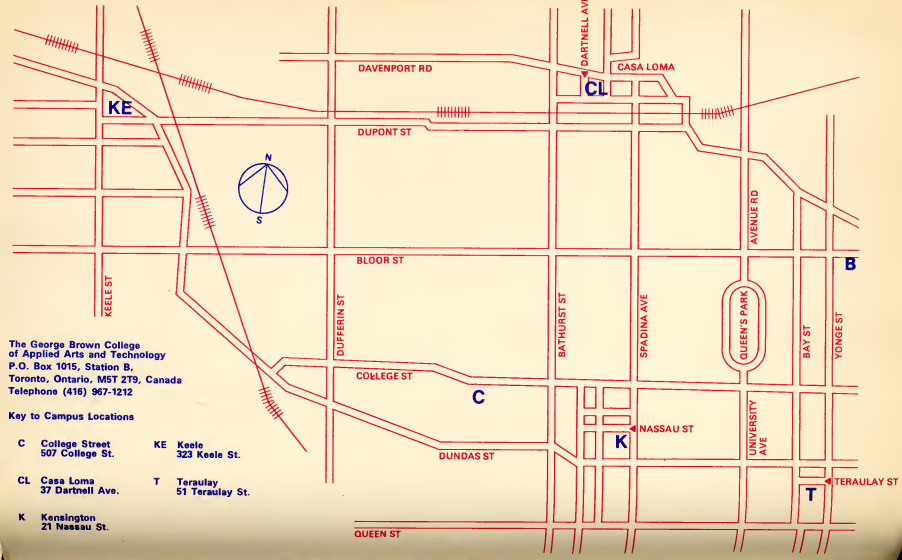
K & CL	12	Precision Instrument Techniques		96
CL	12	Process Piping Design		91
T	8	*Protection Services & Security		154
T	10	#Radio & Television Service Technician		159
CL	10	*Refrigeration & Air Conditioning		46
CL	0	*Residential Metal Siding Installation		49
K	10	#Retail Meat Cutter		159
K	10	*Retail Meat Cutting		136
T	12	Sales		62
T	10	*Screen Printing		145
T	12	Secretarial Science - General		56
T	12	- Legal		57
T	12	- Medical		58
CL	10	#Sheet Metal Worker		159
K	10	Ship's Cooks		139
T	10	*Signwriting		148
CL	10	#Sprinkler & Fire Protection Installer		159
CL	8	*Stationary Engineering		47
CL	10	#Steamfitter		159
T	12	*Stenographic Refresher		69
CL	10	#Structural Steel Draftsman		159
CL	12	Survey Technician		31
CL	12	Survey Technologist		38
CL	10	Thermoplastic Operator (Forming & Fabricating)		105
CL	10	Thermoplastic Set-up Man (Machine Moulding)		105
CL	10	Thermoset Operator (Machine Moulding)		106
CL	10	Thermoset Operator (Hand Lay-up)		106
CL	12	Tool & Die Design		88
CL	10	#Toolmaker		159
CL	12	Toolmaking Technician		89
K	0	*Tractor Trailer Driving		155
T & KE	0	*Typing Refresher		69
T	0	*Typist - General Office		66
CL	10	#Watch Repairer		159
CL	12	Watchmaking		95
K	10	*Welder Fitter		108
K	0	*Welder Fitter Refresher		110
K	8	*Welding Operator		108
K	12	Welding Specialist		109

1973 THE GEORGE BROWN COLLEGE CALENDAR OF EVENTS (REVISED - MARCH 20, 1973)

April	2	Evening registration: part-time courses.
April	20	Good Friday; College closed.
April	23	Easter Monday; College closed.
April	24	Registration: apprenticeship programs.
May	21	Victoria Day; College closed.
June	15	Completion of technician and technologist year.
July	2	Canada Day; College closed.
July	31	Last registration date for students from foreign countries.
August	3	Completion of two-year technologist programs.
August	6	Civic holiday; College closed.
August to	27 31	Registration week for post-secondary programs.
September	3	Labour Day; College closed.
September	4	Registration: apprenticeship and short programs. Post-secondary program classes commence.
September	17	First registration night: part-time courses.
October	1	First night of classes: part-time courses.
October	8	Thanksgiving Day; College closed.
October	27	Convocation.
October	29	Registration: apprenticeship programs.
December	21	Last day of first semester, 1973.

1974

January	1	New Year's Day; College closed.
January	2	First day of second semester. Registration: apprenticeship programs.
January	3	Last registration day: all courses: second semester.
January	7	First registration night: part-time courses.
January	9	First night of classes: part-time courses.
February	25	Registration: apprenticeship programs.
April	1	First registration night: part-time courses.
April	12	Good Friday; College closed.
April	15	Easter Monday; College closed.
April	22	Registration: apprenticeship programs.
April	26	Completion of two-year technician programs.
May	27	Victoria Day; College closed.
June	14	Completion of technician and technologist year.
July	1	Canada Day; College closed.
August	2	Completion of two-year technologist programs.
August	5	Civic holiday; College closed.



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Telephone (416) 967-1212

Key to Campus Locations

C	College Street 507 College St.	KE	Keele 323 Keele St.
CL	Casa Loma 37 Dartnell Ave.	T	Teraulay 51 Teraulay St.
K	Kensington 21 Nassau St.		